Water Standards and Studies Report 88-8

Data Supplement:

A Four Year Study of Bacteriological Characteristics at Recreational Beaches, Manitoba, Canada

Manitoba
Environment and
Workplace Safety
and Health

DATA SUPPLEMENT:
A FOUR YEAR STUDY OF BACTERIOLOGICAL CHARACTERISTICS AT RECREATIONAL BEACHES MANITOBA, CANADA

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Water Standards and Studies Report #88-8

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APPENDIX 1

Table 1a: Fecal coliform, Escherichia coli and fecal streptococcus characteristics of Gimli Beach, Lake Winnipeg.

Date	Fecal Coliform 1	2	3	4	5	Geo. Mean	30-Day Geo. Mean	Escherichia coli 1	2	3	4	5	Geo. Mean	30-Day Geo. Mean	Fecal Streptococcus 1	2	3	4	5	Geo. Mean	30-Day Geo. Mean
May 16/84	<100	<100	<100	<100	<100	<100	<100								2	<1	<1	<1	<1	<1	<1
June 1/84	<100	<100	<100	<100	<100	<100	<100								8	<1	5	<1	3	<3	<2
June 4/84	<100	<100	100	<100	<100	<100	<100								21	46	58	50	30	38	<5
June 9/84	200	<100	<100	<100	300	<143	<109								200	100	400	200	200	200	<12
June 14/84	100	100	100	<100	100	<100	<107								64	25	13	19	40	28	<14
June 17/84	<100	<100	<100	<100	<100	<100	<107								19	21	18	4	4	10	<22
June 22/84	<100	<100	<100	<100	200	<115	<109								43	48	52	48	>300	>69	<27
June 25/84	<100	100	<100	-	200	<119	<110								69	63	61	-	57	62	<30
June 30/84	<100	<100	<100	300	100	<125	<112								17	18	25	100	74	36	<31
July 5/84	400	100	300	500	500	313	<129								>300	>300	>300	>300	>300	>300	>57
July 8/84	<100	<100	<100	<100	<100	<100	<129								14	20	4	22	8	11	>48
July 13/84	<100	<100	<100	<100	<100	<100	<123								14	32	34	40	26	28	>37
July 16/84	100	200	600	200	100	189	<134								95	101	216	258	188	159	>47
July 21/84	<100	<100	200	<100	100	<115	<136								33	44	80	114	131	70	>60
July 26/84	300	<100	200	100	300	<179	<147								213	83	152	151	>300	>165	>67
July 29/84	<100	<100	200	<100	100	<115	<145								80	66	60	148	130	91	>70
Aug. 3/84	<100	100	<100	<100	<100	<100	<141								26	32	35	38	41	34	>70
Aug. 6/84	400	200	100	1000	500	331	<140								76	72	68	125	81	82	>59
Aug. 11/84	<100	<100	100	200	100	<115	<142								65	39	48	49	63	52	>71
Aug. 16/84	<100	100	<100	300	100	<125	<146								116	>300	260	86	96	>150	>77
Aug. 19/84	<100	<100	100	100	2200	<186	<146								16	19	6	10	16	12	>56
Aug. 24/84	100	<100	<100	<100	100	<100	<144								32	>300	28	32	66	>56	>55
Aug. 27/84	<100	<100	<100	<100	<100	<100	<134								8	7	6	28	13	10	>39
Sept. 1/84	<100	<100	200	100	<100	<115	<134								24	22	36	46	36	32	>34
May 27/85	<10	10	60	50	70	<29	<29	20	100	30	30	30	39	39	7	10	3	13	12	8	8
June 1/85	30	30	20	10	50	25	<27	20	20	40	30	20	25	31	48	68	42	52	50	51	20
June 3/85	20	10	30	10	10	14	<22	20	10	<10	<10	NR	<12	<24	13	12	15	9	6	11	16
June 7/85	<10	<10	<10	<10	30	<13	<19	<10	<10	<10	<10	10	<10	18	2	4	3	2	2	3	10
June 9/85	40	40	90	90	20	41	<21	100	80	120	140	90	104	<58	118	217	105	171	130	143	17
June 13/85	200	30	60	80	80	75	<26	180	160	160	90	60	111	<66	40	30	23	29	41	32	19
June 16/85	<10	<10	<10	10	10	<10	<23	20	<10	<10	20	10	<13	<52	10	9	8	10	7	9	17
June 23/85	<10	20	40	20	<10	<17	<22	10	20	40	10	40	20	<46	126	82	86	92	84	93	21
June 27/85	<10	<10	<50	<10	20	<16	<22	<10	20	50	20	10	<18	<27	78	86	70	72	70	75	24
June 29/85	10	<10	<10	10	10	<10	<20	50	10	10	<10	<10	<14	<25	24	62	72	(326)	30	64	27
July 1/85	10	<10	<10	30	10	<12	<21	<10	<10	<10	20	<10	<10	<25	8	6	<2	14	14	<7	<27
July 7/85	40	10	20	60	60	31	<23	40	50	70	20	60	44	<28	174	163	151	187	79	145	<27
July 11/85	40	60	40	120	30	51	<25	40	60	50	100	30	52	<36	65	86	97	75	57	75	<35
July 13/85	180	170	70	90	60	103	<31	280	190	190	130	100	167	<39	190	126	158	186	178	166	<49
July 15/85	20	70	100	70	70	59	<25	70	60	30	80	30	50	<29	30	34	34	38	32	34	<52
July 20/85	70	80	260	200	150	134	<33	70	90	410	130	270	155	<38	37	66	73	150	138	82	<66
July 22/85	180	110	100	100	120	119	<37	100	120	60	80	110	91	<42	<85	76	79	75	106	83	<68
July 28/85	670	1240	750	330	440	620	<61	610	1480	520	360	430	592	<66	>300	>300	>300	>300	>300	>300	><73
Aug. 1/85	90	50	100	100	70	79	<77	30	40	160	120	250	90	<82	180	122	158	170	157	156	><80
Aug. 4/85	700	570	430	400	500	509	116	580	390	450	540	510	489	124	>300	>300	>300	>300	>300	>300	>122
Aug. 10/85	40	120	80	90	60	73	128	50	90	120	100	90	89	138	129	121	104	120	170	127	>120
Aug. 12/85	80	150	180	100	150	127	141	130	130	110	160	130	131	156	102	97	150	114	131	117	>126
Aug. 18/85	390	260	290	330	280	307	181	300	200	260	280	230	251	179	570	670	780	720	670	678	<177
Aug. 22/85	10	60	60	50	10	24	149	20	40	10	20	10	17	136	20	120	40	60	40	60	>171
Aug. 24/85	10	10	10	20	<10	<11	111	10	10	20	10	10	11	105	70	60	60	60	60	62	>165

Table 1a: continued.

Date	Fecal Coliform 1	2	3	4	5	Geo. Mean	30-Day Geo. Mean	Escherichia coli 1	2	3	4	5	Geo. Mean	30-Day Geo. Mean	Fecal Streptococcus 1	2	3	4	5	Geo. Mean	30-Day Geo. Mean
June 12/86	<10	<10	10	10	10	<10	<10								<10	<10	<10	<10	<10	<10	<10
June 15/86	NR	<10	<10	<10	<10	<10	<10	NR	<10	<10	<10	10	<10		NR	<10	<10	<10	<10	<10	<10
June 19/86	20	<10	10	<10	<10	<11	<11								130	140	200	80	110	126	<25
June 21/86	<10	<10	<10	10	20	<11	<11								<10	<10	10	<10	<10	<10	<19
June 23/86?	>3000	<10	<10	<10	<10	><31	<14								2140	2100	2190	1810	1870	2016	<51
June 28/86	<10	<10	<10	<10	10	<10	<13								20	20	90	<10	20	<23	<45
June 30/86	<10	10	10	10	<10	<10	<12								30	<10	30	10	10	<16	<38
July 5/86	20	10	20	30	40	22	<14	30	50	30	20	<10	<25		90	150	30	60	90	74	<42
July 12/86	70	20	160	50	20	47	<16								50	20	40	40	40	36	<41
July 17/86	670	230	510	480	280	402	<28								>3000	>3000	2280	>3000	>3000	>2851	><96
July 19/86	40	<10	10	20	70	<22	<28								40	20	20	30	40	29	><84
July 25/86	200	330	220	150	220	217	<36								350	220	220	260	220	250	><79
July 27/86	290	170	140	20	90	104	<57								340	190	80	50	270	147	><86
Aug. 1/86	60	90	70	90	60	73	<81								10	30	50	100	100	43	><119
Aug. 3/86	60	30	20	<10	210	<38	<74								40	10	20	50	30	26	><99
Aug. 8/86	80	90	30	40	10	39	<80	60	70	70	30	30	49		10	60	<10	30	60	<26	><87
Aug. 17/86	40	60	90	90	90	70	<84								110	130	160	90	40	96	><98
Aug. 21/86	480	<10	160	230	60	<101	<83								330	50	100	100	50	96	<72
Aug. 23/86	270	80	20	50	140	79	<82								70	70	80	100	900	129	<77
June 4/87	10	60	60	60	50	41	41														
June 7/87	<10	<10	<10	10	<10	<10	<20								110	150	90	120	110	114	114
June 11/87	18	36	40	80	46	39	<30								10	110	10	10	<10	<17	<43
June 13/87	100	160	210	220	240	178	<41								20	20	10	30	<10	16	<31
June 15/87	90	110	180	150	140	130	<52								130	230	40	130	30	86	<40
June 19/87	<10	<10	<10	<10	<10	<10	<39								40	50	40	100	20	44	<41
June 21/87	10	40	40	40	20	26	<37								30	<10	<10	10	10	12	<34
July 3/87	60	20	50	20	<10	26	<36								<10	<10	30	30	20	18	<31
July 17/87	1030	1250	1580	1230	1150	1235	<54								20	20	20	20	20	20	<29
July 25/87	40	30	20	10	190	34	<103								1750	1800	1600	1780	1810	1746	<53
July 30/87	282	188	140	150	174	181	<119								80	20	10	50	30	30	101
Aug. 8/87	20	12	16	46	50	24	87								>300	102	112	98	126	133	>109
															20	<2	48	12	12	12	><96

Table 1b: Field observations recorded during the microbiological sample collections at Gimli Beach, Lake Winnipeg.

Date	Time (CDT)	Air Temp. (°C)	Water Temp. (°C)	Wind Direction	Cloud Cover (%)	Recent Precipitation	Visible Algae	Wave Action	Turbidity	Bather Load	Water Colour	Other
May 16/84	9:30	15	9	onshore	100	none	light	light	moderate	0	light	
June 1/84	11:10	20	13	offshore	70	light	light	none	moderate	0	light	
June 4/84	10:00	17	14	onshore	10	none	light	light	moderate	0	light	
June 9/84	10:40	10	11	onshore	100	moderate	light	heavy	moderate	0	light	
June 14/84	9:15	15	16	offshore	75	none	light	light	extensive	0	light	
June 17/84	11:15	20	17	offshore	70	moderate	light	none	moderate	8	light	
June 22/84	9:30	20	18	offshore	100	heavy	light	none	extensive	0	light	
June 25/84	11:40	20	18	onshore	60	none	light	heavy	extensive	2	light	
June 30/84	9:00	20	19	onshore	0	none	light	heavy	extensive	0	light	
July 5/84	11:00	17	19	onshore	50	none	light	heavy	extensive	0	light	
July 8/84	8:50	17	19	onshore	10	light	light	moderate	extensive	2	light	
July 13/84	10:55	20	-	onshore	80	light	light	heavy	extensive	0	light	
July 16/84	9:20	16	21	onshore	90	moderate	moderate	light	extensive	0	light	
July 21/84	10:50	22	21	onshore	70	light	light	moderate	extensive	6	light	
July 26/84	9:00	20	22	onshore	20	none	light	light	moderate	6	light	
July 29/84	10:50	23	23	onshore	60	none	light	moderate	extensive	40	light	
Aug. 3/84	9:10	21	23	offshore	10	none	light	none	moderate	1	light	
Aug. 6/84	10:30	24	22	offshore	0	light	light	none	extensive	20	light	
Aug. 11/84	9:00	17	21	onshore	10	none	light	heavy	extensive	0	light	
Aug. 16/84	11:00	17	21	onshore	70	moderate	none	heavy	extensive	2	light	
Aug. 19/84	9:20	19	21	onshore	30	none	light	light	slight	5	light	
Aug. 24/84	11:00	19	21	onshore	30	none	light	heavy	extensive	6	light	
Aug. 27/84	9:10	20	20	offshore	10	none	light	light	moderate	0	light	
Sept. 2/84	-	-	-	-	-	-	-	-	-	-	-	
May 27/85	9:00	13	11	onshore	10	none	none	moderate	moderate	0	light	
June 1/85	10:50	6	11	onshore	80	heavy	none	crests	extreme	0	light	
June 3/85	11:20	10	12	onshore	70	none	none	crests	extreme	0	light	
June 7/85	9:00	18	14	offshore	0	light	none	light	moderate	0	clear	
June 9/85	10:10	14	12	onshore	70	moderate	none	crests	extreme	0	clear	
June 13/85	9:00	14	16	onshore	10	none	none	moderate	extreme	0	light	
June 16/85	10:20	17	17	offshore	75	moderate	none	light	moderate	0	light	
June 23/85	8:30	12	14	offshore	10	none	none	moderate	extreme	0	light	
June 27/85	10:35	10	14	onshore	100	light	none	crests	extreme	0	light	
June 29/85	7:45	13	14	onshore	100	light	light	moderate	extreme	0	light	
July 1/85	9:45	16	15	offshore	10	none	none	light	extreme	0	light	
July 7/85	8:00	21	21	onshore	10	none	light	light	extreme	0	light	
July 11/85	9:55	18	18	onshore	90	none	light	light	extreme	2	light	
July 13/85	8:00	17	19	onshore	50	light	light	crests	extreme	0	light	
July 15/85	10:15	18	19	onshore	20	light	light	moderate	extreme	0	light	
July 20/85	8:45	16	19	onshore	10	none	light	light	extreme	0	light	
July 22/85	10:20	16	18	onshore	80	none	light	crests	extreme	0	light	
July 28/85	8:30	12	18	offshore	80	none	light	crests	extreme	0	light	
Aug. 1/85	10:30	18	20	offshore	10	none	light	light	moderate	1	light	
Aug. 4/85	8:00	19	19	onshore	100	moderate	light	moderate	extreme	0	light	
Aug. 10/85	11:00	16	18	offshore	10	none	light	none	extreme	2	light	
Aug. 12/85	8:15	12	17	onshore	100	light	light	crests	extreme	0	light	
Aug. 18/85	10:20	10	13	onshore	100	heavy	light	crests	extreme	0	light	
Aug. 22/85	8:30	16	16	onshore	100	light	light	crests	extreme	0	light	
Aug. 24/85	10:10	17	16	onshore	100	light	moderate	light	moderate	0	light	

Table 1b: continued.

Date	Time (CDT)	Air Temp. (°C)	Water Temp. (°C)	Wind Direction	Cloud Cover (%)	Recent Precipitation	Visible Algae	Wave Action	Turbidity	Bather Load	Water Colour	Other
June 12/86	9:20	17	15	offshore	20	light	none	none	moderate	0	light	
June 15/86	10:40	12	17	offshore	50	light	light	moderate	moderate	0	light	
June 19/86	9:15	21	18	onshore	20	none	light	moderate	extreme	4	light	
June 21/86	10:05	20	19	offshore	100	moderate	light	light	moderate	0	light	
June 23/86	9:15	12	16	onshore	100	none	light	crests	extreme	0	light	
June 28/86	10:00	18	17	offshore	0	none	light	light	moderate	0	light	
June 30/86	9:00	17	17	offshore	80	none	light	light	moderate	2	light	
July 5/86	10:00	19	20	onshore	100	heavy	light	crests	extreme	2	light	
July 12/86	8:00	15	18	onshore	100	heavy	light	crests	extreme	0	light	
July 17/86	11:05	18	19	onshore	100	moderate	light	moderate	extreme	0	light	
July 19/86	8:00	17	20	onshore	20	none	light	light	extreme	0	light	
July 25/86	11:00	20	21	onshore	50	light	light	moderate	extreme	2	light	
July 27/86	8:05	17	21	onshore	100	light	moderate	moderate	extreme	1	light	
Aug. 1/86	10:50	17	20	onshore	100	heavy	light	crests	extreme	0	light	
Aug. 3/86	8:00	16	20	onshore	100	moderate	light	moderate	extreme	1	light	
Aug. 8/86	11:05	18	20	onshore	10	none	light	moderate	moderate	0	light	
Aug. 17/86	9:50	14	20	offshore	20	none	light	light	extreme	0	light	
Aug. 21/86	9:05	10	19	offshore	0	none	moderate	light	slight	0	light	
Aug. 23/86	9:50	14	19	offshore	0	none	heavy	light	moderate	0	light	
June 4/87	8:45	10	12	onshore	90	moderate	none	crests	extreme	0	light	
June 7/87	9:55	17	17	onshore	10	light	light	moderate	moderate	2	light	
June 11/87	8:10	12	15	offshore	100	heavy	light	light	extreme	0	light	
June 13/87	9:55	22	18	offshore	0	none	light	moderate	moderate	3	light	
June 15/87	8:35	18	18	onshore	50	none	light	moderate	extreme	0	light	
June 19/87	11:45	26	22	onshore	10	none	light	light	slight	20	light	
June 21/87	9:15	22	20	offshore	50	moderate	light	light	extreme	2	light	
July 3/87	11:00	24	19	offshore	10	light	light	light	moderate	20	light	
July 17/87	9:30	16	19	onshore	30	none	light	moderate	extreme	1	light	
July 25/87	9:30	16	21	offshore	10	none	moderate	light	moderate	6	light	
July 30/87	10:35	24	24	offshore	30	none	moderate	light	moderate	20	light	
Aug. 8/87	8:50	16	22	offshore	10	none	moderate	light	slight	0	light	

Table 2a: Fecal coliform, Escherichia coli and fecal streptococcus characteristics of Sandy Hook Beach, Lake Winnipeg.

Date	Fecal Coliform 1	2	3	4	5	Geo. Mean	30-Day Geo. Mean	Escherichia coli 1	2	3	4	5	Geo. Mean	30-Day Geo. Mean	Fecal Streptococcus 1	2	3	4	5	Geo. Mean	30-Day Geo. Mean
May 16/84	<100	<100	<100	<100	<100	<100	<100								<1	<1	<1	<1	<1	<1	<1
June 1/84	<100	<100	<100	<100	<100	<100	<100								20	10	9	4	19	11	<3
June 4/84	<100	<100	<100	<100	<100	<100	<100								3	1	3	8	6	3	<3
June 9/84	100	<100	600	1000	400	<299	<132								500	<100	600	200	300	<283	<10
June 14/84	<100	<100	<100	<100	<100	<100	<125								9	6	5	4	7	6	<9
June 17/84	<100	<100	<100	<100	<100	<100	<125								20	34	55	40	43	36	<19
June 22/84	<100	<100	<100	<100	<100	<100	<120								288	271	>300	175	161	>231	><28
June 25/84	200	200	100	<100	<100	<132	<122								67	66	72	50	81	66	><32
June 30/84	<100	100	<100	100	<100	<100	<119								74	52	96	35	94	66	><35
July 5/84	100	100	<100	100	<100	<100	<119								>300	>300	>300	>300	>300	>300	><53
July 8/84	<100	100	<100	<100	100	<100	<119								60	30	48	26	32	37	><72
July 13/84	<100	<100	<100	100	100	<100	<104								96	146	128	122	90	115	>64
July 16/84	100	<100	100	100	200	<115	<105								184	142	140	146	168	155	>96
July 21/84	<100	100	<100	<100	100	<100	<105								>300	>300	>300	>300	>300	>300	>125
July 26/84	<100	<100	<100	<100	<100	<100	<105								>300	232	114	197	150	>188	>122
July 29/84	<100	<100	<100	<100	<100	<100	<102								>300	>300	>300	>300	>300	>300	>148
Aug. 3/84	<100	<100	<100	<100	<100	<100	<102								192	76	64	173	179	124	>160
Aug. 6/84	<100	<100	<100	<100	<100	<100	<102								55	22	31	117	97	53	>129
Aug. 11/84	<100	<100	<100	<100	<100	<100	<102								52	35	53	41	46	45	>132
Aug. 16/84	200	200	100	200	100	151	<107								>300	>300	>300	280	274	>292	>148
Aug. 19/84	<100	<100	<100	<100	<100	<100	<105								39	42	25	21	41	32	>122
Aug. 24/84	<100	<100	<100	<100	100	<100	<105								80	82	68	>300	76	>100	>106
Aug. 27/84	<100	<100	<100	<100	<100	<100	<105								19	15	5	11	7	10	>74
Sept. 1/84	<100	<100	<100	<100	<100	<100	<105								37	28	27	24	29	29	>55
May 27/85	<10	<10	10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	1	<1	1	1	<1	<1	<1
June 1/85	90	60	90	100	50	75	<27	60	90	140	120	60	89	<30	114	122	98	114	78	104	<102
June 3/85	40	40	10	20	40	26	<27	50	60	<10	40	60	37	<32	14	19	65	17	37	26	<64
June 7/85	10	<10	<10	10	<10	<10	<21	<10	10	<10	<10	<10	<10	<24	34	11	9	12	5	12	<42
June 9/85	80	50	20	70	50	49	<25	50	70	50	50	60	55	<28	131	144	176	161	165	155	<22
June 13/85	10	<10	<10	<10	10	<10	<21	<10	<10	<10	10	<10	<10	<24	NR	200	6	9	8	17	<21
June 16/85	<10	<10	10	<10	10	<10	<19	<10	<10	<10	<10	<10	<10	<24	6	8	5	13	6	7	<18
June 23/85	90	80	140	<10	150	<69	<23	130	80	120	110	120	111	<26	96	104	116	116	124	111	<23
June 27/85	20	20	30	30	20	24	<23	10	<10	10	30	40	16	<23	22	220	50	30	42	50	25
June 29/85	30	<10	20	30	80	<27	<23	70	10	100	60	50	46	<26	122	112	222	120	94	128	<43
July 1/85	<10	<10	10	10	<10	<10	<23	10	10	20	<20	<10	<10	<26	8	4	4	10	10	7	<29
July 7/85	10	<10	<10	<10	<10	<10	18	<10	<10	<10	<10	<10	<10	<18	19	77	14	16	24	24	<24
July 11/85	20	<10	<10	<10	10	<10	<15	<10	10	<10	20	<10	<10	<18	25	25	19	20	37	25	<19
July 13/85	10	20	10	50	50	22	<17	20	40	30	50	20	30	<19	106	76	238	128	88	117	<25
July 15/85	10	<10	<10	10	20	<11	<17	<10	10	10	20	20	<13	<20	90	56	52	82	164	81	<38
July 20/85	<10	<10	20	20	<10	<13	<18	10	10	10	20	20	<13	<20	80	94	145	103	104	103	<52
July 22/85	90	30	30	40	30	40	<19	90	30	30	40	30	40	<22	<300	81	52	76	50	>86	>54
July 28/85	10	10	10	<10	80	<15	<16	10	<10	10	<10	150	<17	<18	47	35	57	64	>300	>71	>52
Aug. 1/85	20	<10	<10	<10	10	<11	<14	20	10	<10	<40	<10	<15	<15	29	23	21	36	31	27	>44
Aug. 4/85	700	570	430	400	500	509	<22	580	390	450	540	510	490	<22	>300	>300	>300	>300	>300	>300	>67
Aug. 10/85	10	<10	<10	10	<10	<10	<22	<10	10	10	10	<10	<10	<22	33	37	34	35	107	43	>72
Aug. 12/85	30	40	30	<10	60	<29	<25	50	60	50	50	100	60	<27	126	95	129	137	143	125	>86
Aug. 18/85	180	260	80	120	160	148	<35	130	140	160	150	40	112	<38	820	560	340	480	520	523	>105
Aug. 22/85	60	60	80	20	40	67	<40	40	60	70	50	10	38	<44	250	170	160	180	160	181	>113
Aug. 24/85	40	<10	20	30	<10	<19	<37	60	50	90	50	50	58	<46	140	100	90	130	70	103	>115

Table 2a: continued.

Date	Fecal Coliform 1	2	3	4	5	Geo. Mean	30-Day Geo. Mean	Escherichia coli 1	2	3	4	5	Geo. Mean	30-Day Geo. Mean	Fecal Streptococcus 1	2	3	4	5	Geo. Mean	30-Day Geo. Mean
June 12/86	10	<10	<10	<10	<10	<10	<10														
June 15/86	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10		<10	<10	<10	<10	20	<12	<12
June 19/86	<10	<10	<10	<10	<10	<10	<10								<10	<10	<10	<10	10	<10	<11
June 21/86	<10	<10	<10	<10	<10	<10	<10								70	40	10	20	60	32	<15
June 23/86	90	30	100	80	50	64	<15								10	<10	<10	10	<10	<10	<13
June 28/86	<10	<10	<10	<10	<10	<10	<14								220	210	280	260	200	232	<24
June 30/86	<10	<10	10	<10	<10	<10	<13								70	20	30	60	30	38	<26
July 5/86	<10	<10	<10	<10	<10	<10	<13	10	<10	40	40	30	<22		10	<10	<10	<10	<10	<10	<22
July 12/86	20	30	<10	40	20	<22	<13								130	70	70	300	350	146	<28
July 17/86	140	60	70	160	110	101	<19								130	140	200	220	120	157	<34
July 19/86	<10	<10	<10	<10	10	<10	<17								>3000	>3000	2280	>3000	>3000	>2851	<80
July 25/86	110	190	40	90	100	94	<21								50	50	80	10	30	36	<73
July 27/86	<10	<10	<10	150	10	<17	<21								510	590	400	340	380	435	><121
Aug. 1/86	<10	10	<10	<10	<10	<10	<23								90	40	30	830	<10	<62	><112
Aug. 3/86	<10	<10	<10	10	<10	<10	<21								30	50	10	(2160)	60	72	><173
Aug. 8/86	<10	10	20	<10	<10	<11	<21	<10	<10	<10	<10	<10	<10		10	<10	<10	10	20	<12	><123
Aug. 17/86	10	<10	10	<10	<10	<10	<19								20	20	20	<10	10	<15	><93
Aug. 21/86	<10	<10	10	<10	10	<10	<15								10	10	10	10	30	13	><67
Aug. 23/86	<10	<10	<10	<10	<10	<10	<14								10	50	90	30	80	40	><40
															100	100	100	140	50	93	><45
June 4/87	40	10	80	30	40	33	33														
June 7/87	<10	<10	<10	10	<10	<10	<18								30	90	120	120	90	81	81
June 11/87	30	8	8	12	6	11	<15								<10	<10	10	<10	10	<10	<28
June 13/87	20	<10	30	10	10	<14	<15								50	28	22	24	30	30	<29
June 15/87	60	20	50	60	60	47	<19								90	40	30	100	40	53	<34
June 19/87	<10	<10	<10	<10	<10	<10	<17								<10	40	50	50	20	<29	<33
June 21/87	10	10	10	<10	<10	<10	<16								60	30	<10	10	<10	<18	<29
July 3/87	10	10	<10	50	10	<14	<15								50	40	10	30	<10	<23	<28
July 17/87	100	80	190	170	280	148	<21								50	60	60	140	50	66	<29
July 25/87	<10	20	<10	10	<10	<11	<29								1520	370	620	550	700	669	<56
July 30/87	30	4	4	6	2	6	<19								50	20	80	10	50	151	66
Aug. 8/87	2	4	18	16	NR	7	<17								140	188	264	>300	140	>196	>130
															10	20	28	23	20	19	>96

Table 2b: Field observations recorded during the microbiological sample collections at Sandy Hook Beach, Lake Winnipeg.

Date	Time (CDT)	Air Temp. (°C)	Water Temp. (°C)	Wind Direction	Cloud Cover (%)	Recent Precipitation	Visible Algae	Wave Action	Turbidity	Bather Load	Water Colour	Other
May 16/84	10:30	15	11	onshore	100	none	light	light	moderate	0	light	
June 1/84	10:10	20	16	onshore	30	light	light	light	moderate	0	light	
June 4/84	10:50	17	16	onshore	18	none	moderate	light	moderate	0	light	
June 9/84	10:05	10	11	onshore	100	moderate	light	heavy	moderate	0	light	
June 14/84	9:50	16	16	offshore	75	none	light	light	extensive	0	light	
June 17/84	10:10	20	19	offshore	50	moderate	light	none	moderate	0	light	
June 22/84	10:00	20	19	offshore	100	heavy	moderate	none	extensive	0	light	
June 25/84	11:00	20	19	onshore	60	none	moderate	moderate	extensive	0	light	
June 30/84	9:40	21	20	onshore	0	none	moderate	heavy	extensive	0	light	
July 5/84	10:25	17	19	onshore	50	none	moderate	heavy	extensive	0	light	
July 8/84	9:30	17	19	onshore	10	light	moderate	moderate	extensive	0	light	
July 13/84	10:10	18	22	onshore	60	light	moderate	moderate	extensive	0	light	
July 16/84	9:50	17	20	onshore	80	moderate	light	light	extensive	0	light	
July 21/84	10:25	20	22	offshore	80	light	light	none	extensive	0	light	
July 26/84	10:00	22	23	onshore	20	none	light	light	extensive	0	light	
July 29/84	10:30	23	23	onshore	60	none	light	moderate	extensive	10	light	
Aug. 3/84	9:40	21	23	offshore	10	none	light	none	moderate	0	light	
Aug. 6/84	9:45	22	22	offshore	0	light	light	none	extensive	3	light	
Aug. 11/84	9:30	17	21	onshore	10	none	light	heavy	extensive	0	light	
Aug. 16/84	10:40	17	21	onshore	70	heavy	none	heavy	extensive	0	light	
Aug. 19/84	10:05	19	21	onshore	30	none	light	light	moderate	0	light	
Aug. 24/84	10:40	19	20	onshore	30	none	light	heavy	extensive	0	light	
Aug. 27/84	9:45	21	21	offshore	10	none	moderate	light	extensive	0	light	
Sept. 1/84	-	-	-	-	-	-	-	-	-	-	-	
May 27/85	9:50	14	13	onshore	10	none	none	moderate	moderate	0	light	
June 1/85	10:10	6	12	onshore	80	heavy	none	crests	extreme	0	light	
June 3/85	10:45	9	11	onshore	100	none	none	crests	extreme	0	light	
June 7/85	9:40	18	15	offshore	0	light	none	light	moderate	0	clear	
June 9/85	9:30	14	14	onshore	80	moderate	none	crests	extreme	0	light	
June 13/85	9:50	15	17	onshore	10	none	light	moderate	extreme	0	light	
June 16/85	9:40	17	17	offshore	80	moderate	none	light	extreme	0	light	
June 23/85	9:15	14	14	offshore	20	none	none	moderate	extreme	0	light	
June 27/85	10:00	10	14	onshore	100	light	none	crests	extreme	0	light	
June 29/85	8:30	13	14	onshore	100	light	light	moderate	extreme	0	light	
July 1/85	9:15	15	15	offshore	10	none	none	light	extreme	0	light	
July 7/85	8:40	23	22	onshore	10	none	light	light	extreme	0	light	
July 11/85	9:30	17	18	onshore	90	none	light	light	extreme	0	light	
July 13/85	8:40	17	20	onshore	50	light	light	crests	extreme	0	light	
July 15/85	9:50	18	20	onshore	20	light	light	moderate	extreme	0	light	
July 20/85	9:25	17	20	onshore	10	none	light	moderate	extreme	0	light	
July 22/85	9:50	15	19	onshore	80	none	light	moderate	extreme	0	light	
July 28/85	9:15	13	18	offshore	80	none	light	crests	extreme	0	light	
Aug. 1/85	10:00	17	19	offshore	10	none	light	none	moderate	1	light	
Aug. 4/85	8:45	19	20	onshore	100	moderate	light	moderate	extreme	0	light	
Aug. 10/85	10:30	16	18	offshore	10	none	moderate	none	extreme	0	light	
Aug. 12/85	9:00	12	17	onshore	100	light	light	crests	extreme	0	light	
Aug. 18/85	9:45	10	13	onshore	100	heavy	light	crests	extreme	0	light	
Aug. 22/85	9:05	16	16	onshore	100	light	light	crests	extreme	0	light	
Aug. 24/85	9:35	17	16	onshore	100	light	heavy	light	moderate	0	light	

Table 2b: continued.

Date	Time (CDT)	Air Temp. (°C)	Water Temp. (°C)	Wind Direction	Cloud Cover (%)	Recent Precipitation	Visible Algae	Wave Action	Turbidity	Bather Load	Water Colour	Other
June 12/86	9:50	17	17	offshore	30	light	none	light	moderate	0	light	
June 15/86	10:05	11	16	offshore	100	light	light	light	moderate	0	light	
June 19/86	9:50	22	18	onshore	20	none	light	moderate	extreme	0	light	
June 21/86	9:40	20	19	offshore	100	moderate	light	light	moderate	0	light	
June 23/86	9:50	11	16	onshore	100	none	light	crests	extreme	0	light	
June 28/86	9:25	17	18	offshore	0	none	light	light	moderate	0	light	
June 30/86	9:40	17	18	offshore	80	none	light	light	moderate	0	light	
July 5/86	9:30	18	20	onshore	100	heavy	light	crests	extreme	0	light	
July 12/86	8:40	15	18	onshore	100	heavy	light	crests	extreme	0	light	
July 17/86	10:35	18	19	onshore	100	moderate	light	moderate	extreme	0	light	
July 19/86	8:30	16	20	onshore	20	none	light	light	extreme	0	light	
July 25/86	10:30	18	21	onshore	50	light	light	moderate	moderate	0	light	
July 27/86	8:40	18	22	onshore	100	light	light	moderate	extreme	2	light	
Aug. 1/86	10:25	17	21	onshore	100	heavy	light	crests	extreme	0	light	
Aug. 3/86	8:35	16	21	onshore	100	moderate	light	moderate	extreme	0	light	
Aug. 8/86	10:30	18	21	onshore	10	none	light	moderate	moderate	0	light	
Aug. 17/86	9:25	12	22	offshore	30	none	light	light	extreme	0	light	
Aug. 21/86	9:35	10	20	offshore	0	none	heavy	light	slight	0	light	
Aug. 23/86	9:25	12	20	offshore	0	none	heavy	light	extreme	0	light	
June 4/87	9:20	11	12	onshore	90	moderate	none	crests	extreme	0	light	
June 7/87	9:25	16	17	onshore	10	light	light	moderate	moderate	0	light	
June 11/87	8:45	16	17	offshore	100	heavy	light	light	extreme	0	light	
June 13/87	9:25	20	18	offshore	0	none	light	moderate	extreme	0	light	
June 15/87	9:10	18	18	onshore	60	none	light	moderate	extreme	0	light	
June 19/87	11:10	24	22	onshore	10	none	light	light	slight	0	light	
June 21/87	9:45	22	21	offshore	50	moderate	light	light	extreme	6	light	
July 3/87	10:35	22	19	onshore	10	light	light	light	moderate	0	light	
July 17/87	9:55	16	19	onshore	30	none	light	moderate	extreme	0	light	
July 25/87	10:00	18	21	offshore	10	none	moderate	light	moderate	0	light	
July 30/87	10:15	24	24	offshore	30	none	moderate	light	slight	0	light	
Aug. 8/87	9:20	16	23	offshore	10	none	moderate	light	slight	0	light	

Table 3a: Fecal coliform, Escherichia coli and fecal streptococcus characteristics of Winnipeg Beach, Lake Winnipeg.

Date	Fecal Coliform 1	2	3	4	5	Geo. Mean	30-Day Geo. Mean	Escherichia coli 1	2	3	4	5	Geo. Mean	30-Day Geo. Mean	Fecal Streptococcus 1	2	3	4	5	Geo. Mean	30-Day Geo. Mean
May 16/84	<100	<100	<100	<100	<100	<100	<100														
June 1/84	<100	<100	<100	<100	<100	<100	<100								<1	<1	<1	<1	1	<1	<1
June 4/84	<100	<100	<100	<100	<100	<100	<100								6	14	9	3	3	6	2
June 9/84	<100	<100	200	<100	100	<115	<104								33	10	7	17	4	11	4
June 14/84	<100	100	<100	<100	<100	<100	<102								300	500	300	100	200	246	11
June 17/84	100	200	100	100	<100	<115	<106								17	153	20	6	18	22	13
June 22/84	<100	100	<100	100	<100	<100	<105								109	124	87	30	23	61	29
June 25/84	<100	<100	<100	100	<100	<100	<104								35	215	32	72	94	70	34
June 30/84	<100	<100	<100	<100	<100	<100	<104								20	24	32	34	31	28	33
July 5/84	300	100	100	300	100	155	<107								10	27	22	56	29	25	32
July 8/84	<100	<100	<100	<100	<100	<100	<107								164	178	182	256	238	200	49
July 13/84	<100	300	500	600	<100	<246	<117								6	8	10	20	12	10	49
July 16/84	100	100	100	200	100	115	<119								168	127	156	208	207	170	47
July 21/84	<100	200	200	<100	<100	<132	<121								126	158	168	84	72	115	57
July 26/84	200	<100	200	100	100	<132	<125								75	75	96	98	85	85	60
July 29/84	<100	100	100	100	100	<100	<125								85	>300	66	194	52	>97	>64
Aug. 3/84	<100	<100	100	200	<100	<115	<127								60	64	36	160	100	74	>72
Aug. 6/84	400	100	<100	200	100	<152	<129								57	47	49	238	31	63	>81
Aug. 11/84	100	<100	<100	<100	<100	<100	<129								102	33	44	74	50	56	>69
Aug. 16/84	200	200	100	<100	100	<132	<120								17	35	37	124	96	48	>83
Aug. 19/84	<100	<100	100	<100	<100	<100	<118								>300	>300	>300	>300	230	>286	>89
Aug. 24/84	<100	<100	<100	<100	<100	<100	<114								5	8	2	3	5	4	>59
Aug. 27/84	<100	<100	100	<100	<100	<100	<110								10	12	8	26	44	16	>48
Sept. 1/84	<100	<100	<100	<100	<100	<100	<110								9	6	9	17	36	12	>36
															21	21	34	20	32	25	>32
May 27/85	<10	10	20	10	<11	<12	30	10	<10	<10	<10	<10	<13	<13	7	4	3	2	1	3	3
June 1/85	10	20	10	20	20	15	<13	10	20	<10	30	20	<16	<14	32	38	28	42	54	38	10
June 3/85	<10	<10	70	10	20	<17	<14	30	30	20	<10	<10	<18	<15	15	6	16	11	8	10	10
June 7/85	530	50	20	60	30	63	<21	700	10	100	70	40	72	<23	126	33	49	69	77	64	16
June 9/85	<10	40	50	10	20	<21	<21	10	10	70	50	30	25	<23	80	97	95	130	100	99	23
June 13/85	<10	10	<10	10	10	<10	<18	10	10	<10	<10	10	<10	<20	5	31	4	200	43	22	23
June 16/85	250	60	40	110	200	106	<24	320	40	70	200	190	128	<26	89	20	24	35	51	38	25
June 23/85	10	30	40	20	20	22	<23	30	<10	40	30	10	<20	<25	28	44	40	46	54	41	27
June 27/85	40	50	40	<10	20	28	<22	30	10	30	50	40	28	<26	36	34	38	42	44	39	28
June 29/85	10	20	20	10	30	16	<23	<10	50	10	20	10	16	<26	38	34	106	30	56	51	38
July 1/85	<10	<10	10	<10	<10	<10	<23	10	10	<10	<10	<10	<10	<25	8	6	6	20	64	13	32
July 7/85	<10	80	20	40	60	<33	<27	60	60	40	30	80	51	<31	45	34	47	48	50	44	39
July 11/85	10	20	30	<10	20	<16	<22	<10	10	<10	10	10	<10	<23	22	27	72	38	116	45	31
July 13/85	60	60	60	60	50	58	<25	80	70	50	80	60	67	<25	70	42	92	52	44	57	36
July 15/85	50	20	20	40	30	30	<28	30	20	30	80	30	34	<28	48	60	50	24	68	47	39
July 20/85	40	80	130	110	110	87	<27	10	30	120	50	60	40	<25	156	129	119	180	127	141	45
July 22/85	60	30	40	50	20	37	<28	40	30	40	40	30	36	<26	61	42	65	50	49	53	46
July 28/85	180	110	200	150	160	157	<35	150	170	210	160	170	171	<32	274	>300	>300	292	>300	>294	>58
Aug. 1/85	30	100	50	70	100	64	<41	40	60	130	10	80	48	<37	223	247	>300	258	>300	>264	>70
Aug. 4/85	240	270	200	240	430	266	<59	200	120	380	280	470	283	<54	>300	>300	>300	>300	>300	>300	>99
Aug. 10/85	30	30	50	40	50	39	<60	60	50	50	70	20	46	<53	138	174	147	196	105	149	>114
Aug. 12/85	<10	60	10	10	20	<16	<54	50	20	40	80	42	42	63	59	>300	83	35	72	>94	>123
Aug. 18/85	100	400	100	200	200	174	<75	280	280	240	240	290	265	80	1220	1230	1200	1120	1090	1171	>203
Aug. 22/85	120	160	110	150	110	128	<78	160	150	90	110	100	119	92	140	200	140	210	270	186	>210
Aug. 24/85	230	<160	230	240	170	203	<97	330	250	190	190	160	217	115	780	640	750	750	890	758	>293

Table 3a: continued.

Date	Fecal Coliform 1	2	3	4	5	Geo. Mean	30-Day Geo. Mean	Escherichia coli 1	2	3	4	5	Geo. Mean	30-Day Geo. Mean	Fecal Streptococcus 1	2	3	4	5	Geo. Mean	30-Day Geo. Mean
June 12/86	40	10	20	50	30	30	30														
June 15/86	<10	<10	<10	<10	10	<10	<20	<10	<10	<10	<10	<10	<10		30	40	<10	<10	<10	<20	<20
June 19/86	<10	<10	<10	<10	<10	<10	<14								<10	20	<10	<10	<10	<12	<32
June 21/86	10	<10	10	<10	<10	<10	<13								30	20	60	40	70	40	<20
June 23/86	80	90	20	30	90	52	<17								10	10	10	20	20	13	<18
June 28/86	10	10	<10	10	40	<13	<16								90	150	80	40	80	81	<24
June 30/86	<10	<10	<10	<10	<10	<10	<15								10	10	10	<10	40	13	<22
July 5/86	90	40	60	90	30	57	<18	120	190	80	110	130	121		<10	<10	10	10	20	<11	<20
July 12/86	130	60	270	100	200	133	<22								320	220	310	220	330	275	<28
July 17/86	300	380	320	430	390	361	<24								100	100	210	210	180	151	<33
July 19/86	10	10	<10	10	20	<11	<22								730	540	580	530	600	592	<60
July 25/86	40	30	30	30	60	37	<40								200	110	340	100	130	158	<66
July 27/86	190	140	320	260	190	211	<49								30	60	40	20	40	36	<80
Aug. 1/86	110	170	110	140	70	115	<83								230	110	320	320	290	237	<92
Aug. 3/86	20	10	10	10	10	11	<65								100	120	120	180	100	121	<169
Aug. 8/86	110	50	120	60	80	79	<68	90	50	100	100	50	74		20	<10	<10	<10	30	<14	<124
Aug. 17/86	60	40	<10	40	40	<33	<57								130	200	140	110	120	137	<111
Aug. 21/86	10	10	10	<10	10	<10	<43								70	20	20	10	40	26	<86
Aug. 23/86	30	10	<10	10	<10	<12	<37								30	50	30	80	30	41	<48
															130	100	100	160	<10	<73	<51
June 4/87	<10	10	10	10	20	<11	<11														
June 7/87	10	20	<10	<10	10	<11	<11								50	40	40	20	50	38	38
June 11/87	20	8	12	16	20	14	<12								40	50	30	20	10	26	31
June 13/87	170	150	110	100	100	123	<21								<10	10	10	<10	10	<10	<21
June 15/87	10	<10	<10	10	20	<11	<19								140	80	200	110	100	120	<33
June 19/87	10	10	10	10	<10	10	<17								10	10	<10	40	20	<15	<28
June 21/87	<10	<10	10	<10	<10	<10	<16								20	130	140	150	60	80	<34
July 3/87	<20	<10	<10	20	<10	<11	<15								10	10	<10	<10	10	<10	<28
July 17/87	230	230	260	250	330	258	<23								30	20	30	30	<10	<22	<27
July 25/87	<10	<10	10	<10	20	<11	<32								360	460	300	270	300	332	<49
July 30/87	50	38	42	24	16	31	<32								10	20	20	20	20	17	<50
Aug. 8/87	2	4	2	4	4	3	<23								100	76	64	50	88	74	<55
															<2	2	10	4	12	<5	<37

Table 3b: Field observations recorded during the microbiological sample collections at Winnipeg Beach, Lake Winnipeg.

Date	Time (CDT)	Air Temp. (°C)	Water Temp. (°C)	Wind Direction	Cloud Cover (%)	Recent Precipitation	Visible Algae	Wave Action	Turbidity	Bather Load	Water Colour	Other
May 16/84	11:00	15	11	onshore	100	none	light	light	moderate	0	light	
June 1/84	9:20	20	16	onshore	30	light	light	light	extensive	0	clear	
June 4/84	11:30	17	17	onshore	70	none	light	light	moderate	3	light	
June 9/84	9:20	10	14	onshore	100	moderate	light	heavy	moderate	0	light	
June 14/84	10:20	17	17	offshore	75	none	light	light	moderate	0	light	
June 17/84	9:30	20	19	offshore	30	moderate	light	none	moderate	0	light	
June 22/84	10:20	22	20	offshore	100	heavy	light	none	extensive	0	light	
June 25/84	10:20	18	20	onshore	50	none	light	moderate	moderate	0	light	
June 30/84	10:00	21	21	onshore	0	none	light	heavy	extensive	9	light	
July 5/84	9:45	17	19	onshore	50	none	moderate	heavy	extensive	0	light	
July 8/84	9:50	20	19	onshore	10	light	light	none	extensive	4	light	
July 13/84	9:40	18	22	onshore	60	light	light	moderate	extensive	0	light	
July 16/84	10:10	18	20	offshore	80	moderate	light	moderate	extensive	2	light	
July 21/84	9:50	20	22	offshore	80	light	light	none	extensive	0	light	
July 26/84	10:20	22	22	onshore	20	none	light	light	moderate	12	light	
July 29/84	9:50	22	22	onshore	60	none	light	moderate	moderate	30	light	
Aug. 3/84	10:00	23	24	onshore	10	none	light	none	moderate	12	light	
Aug. 6/84	9:15	22	22	offshore	0	light	light	none	extensive	10	light	
Aug. 11/84	9:55	18	21	onshore	10	none	light	heavy	extensive	8	light	
Aug. 16/84	10:05	17	21	onshore	80	heavy	none	heavy	extensive	0	light	
Aug. 19/84	10:35	19	22	onshore	30	none	light	light	slight	30	light	
Aug. 24/84	10:00	19	21	onshore	30	none	light	moderate	extensive	0	light	
Aug. 27/84	10:05	21	21	offshore	10	none	light	light	moderate	2	light	
Sept. 1/84	-	-	-	-	-	-	-	-	-	-	-	
May 27/85	10:30	14	13	onshore	10	none	none	moderate	moderate	0	light	
June 1/85	9:20	6	13	onshore	80	heavy	none	crests	extreme	0	light	
June 3/85	10:00	9	12	onshore	100	none	none	moderate	extreme	0	light	
June 7/85	10:10	18	16	offshore	0	light	none	light	moderate	0	clear	
June 9/85	8:45	13	12	onshore	90	moderate	none	crests	extreme	0	light	
June 13/85	10:20	17	18	onshore	10	none	none	moderate	extreme	0	light	
June 16/35	9:05	16	16	offshore	80	moderate	none	light	moderate	0	light	
June 23/85	9:45	14	15	offshore	30	none	light	crests	extreme	0	light	
June 27/85	9:15	10	14	onshore	100	light	light	crests	extreme	0	light	
June 29/85	8:50	13	14	onshore	100	light	light	moderate	extreme	0	light	
July 1/85	8:40	15	15	offshore	10	none	none	none	extreme	0	light	
July 7/85	9:00	23	22	onshore	10	none	light	light	extreme	0	light	
July 11/85	8:45	17	18	onshore	90	none	light	light	extreme	0	light	
July 13/85	8:55	17	21	onshore	50	light	light	crests	extreme	0	light	
July 15/85	9:10	17	19	onshore	30	light	light	moderate	extreme	0	light	
July 20/85	9:45	18	20	onshore	10	none	light	moderate	extreme	0	light	
July 22/85	9:10	15	19	onshore	80	none	light	moderate	extreme	0	light	
July 28/85	9:40	13	19	offshore	100	none	light	crests	extreme	0	light	
Aug. 1/85	9:15	17	18	offshore	10	none	light	none	moderate	0	light	
Aug. 4/85	9:15	20	20	onshore	100	moderate	light	moderate	extreme	0	light	
Aug. 10/85	9:50	16	18	offshore	10	none	moderate	none	moderate	0	light	
Aug. 12/85	9:25	12	17	onshore	100	moderate	light	crests	extreme	0	light	
Aug. 18/85	9:00	10	13	onshore	100	heavy	light	crests	extreme	0	light	
Aug. 22/85	9:30	16	16	onshore	100	light	light	crests	extreme	0	light	
Aug. 24/85	8:55	17	16	onshore	100	light	heavy	light	moderate	0	light	

Table 3b: continued.

Date	Time (CDT)	Air Temp. (°C)	Water Temp. (°C)	Wind Direction	Cloud Cover (%)	Recent Precipitation	Visible Algae	Wave Action	Turbidity	Bather Load	Water Colour	Other
June 12/86	10:15	17	16	offshore	30	light	none	light	extreme	0	light	
June 15/86	9:20	11	17	offshore	100	light	light	light	extreme	0	light	
June 19/86	10:25	23	18	onshore	20	none	light	moderate	extreme	10	light	
June 21/86	9:05	20	18	offshore	100	moderate	light	light	moderate	0	light	
June 23/86	10:15	11	16	onshore	100	none	light	crests	extreme	0	light	
June 28/86	8:50	17	18	offshore	0	none	light	light	moderate	0	light	
June 30/86	10:05	18	18	offshore	100	none	light	light	moderate	0	light	
July 5/86	8:55	17	20	onshore	100	heavy	light	crests	extreme	0	light	
July 12/86	9:15	16	18	onshore	100	heavy	light	crests	extreme	0	light	
July 17/86	10:00	18	20	onshore	100	moderate	light	moderate	extreme	0	light	
July 19/86	8:55	17	21	onshore	30	none	light	light	extreme	0	light	
July 25/86	9:50	18	21	onshore	50	light	light	moderate	moderate	0	light	
July 27/86	9:05	18	22	onshore	100	light	light	moderate	extreme	2	light	
Aug. 1/86	9:50	17	20	onshore	100	heavy	light	crests	extreme	0	light	
Aug. 3/86	9:00	17	21	onshore	100	moderate	light	moderate	moderate	2	light	
Aug. 8/86	10:00	16	20	onshore	10	none	light	light	moderate	0	light	
Aug. 17/86	8:50	12	22	offshore	20	none	light	light	extreme	0	light	
Aug. 21/86	10:00	11	20	offshore	0	none	heavy	light	slight	0	light	
Aug. 23/86	8:50	11	20	offshore	0	none	moderate	light	moderate	0	light	
June 4/87	9:45	10	12	onshore	100	moderate	none	crests	extreme	0	light	
June 7/87	8:55	15	16	onshore	20	light	light	crests	extreme	0	light	
June 11/87	9:15	16	17	offshore	100	heavy	light	light	extreme	0	light	
June 13/87	8:50	20	19	offshore	10	none	light	moderate	extreme	0	light	
June 15/87	9:30	20	18	onshore	70	none	light	moderate	extreme	0	light	
June 19/87	10:35	24	22	onshore	10	none	light	light	slight	1	light	
June 21/87	10:05	23	21	offshore	50	moderate	light	light	extreme	2	light	
July 3/87	10:05	20	20	offshore	10	light	light	light	moderate	12	light	
July 17/87	10:15	17	20	onshore	40	none	light	moderate	extreme	1	light	
July 25/87	10:25	18	20	offshore	10	none	moderate	light	moderate	8	light	
July 30/87	9:55	23	23	offshore	30	none	moderate	light	moderate	10	light	
Aug. 8/87	9:40	18	23	offshore	10	none	light	light	slight	2	light	

Table 4a: Fecal coliform, Escherichia coli and fecal streptococcus characteristics of Matlock Beach, Lake Winnipeg.

Date	Fecal Coliform 1	2	3	4	5	Geo. Mean	30-Day Geo. Mean	Escherichia coli 1	2	3	4	5	Geo. Mean	30-Day Geo. Mean	Fecal Streptococcus 1	2	3	4	5	Geo. Mean	30-Day Geo. Mean
May 16/84	<100	<100	<100	<100	<100	<100	<100								<1	<1	1	4	1	<1	<1
June 1/84	<100	<100	1000	500	300	<272	<165								140	137	94	99	105	116	<12
June 4/84	200	<100	<100	<100	<100	<115	<146								46	52	49	45	18	40	<18
June 9/84	<100	200	600	<100	200	<189	<156								400	700	800	1200	900	753	<46
June 14/84	<100	<100	100	100	<100	<100	<143								43	37	53	60	40	46	<46
June 17/84	1800	800	800	200	600	673	<209								>300	>300	>300	185	>300	>273	>133
June 22/84	<100	<100	<100	<100	200	<115	<189								>300	114	227	68	127	>147	>135
June 25/84	<100	100	<100	<100	<100	<100	<173								73	72	76	56	53	65	>122
June 30/84	100	<100	<100	<100	<100	<100	<161								68	86	44	59	54	61	>112
July 5/84	<100	300	200	<100	400	<189	<154								>300	>300	>300	>300	>300	>300	>126
July 8/84	<100	<100	<100	<100	<100	<100	<151								10	44	12	16	18	17	>114
July 13/84	100	200	400	300	400	249	<157								>300	>300	>300	>300	>300	>300	>102
July 16/84	400	100	200	500	400	276	<178								210	230	306	246	310	257	>126
July 21/84	<100	<100	<100	<100	<100	<100	<140								96	112	66	106	67	87	>109
July 26/84	<100	<100	100	100	<100	<100	<138								14	27	64	39	127	41	>93
July 29/84	<100	<100	<100	<100	<100	<100	<138								82	94	114	58	72	82	>96
Aug. 3/84	<100	<100	<100	<100	<100	<100	<138								25	71	113	64	123	69	>98
Aug. 6/84	200	300	600	800	400	410	<152								182	91	136	135	166	138	>89
Aug. 11/84	100	400	200	100	500	209	<166								39	64	59	61	47	53	>102
Aug. 16/84	100	200	100	600	100	164	<158								256	268	>300	>300	>300	>285	>102
Aug. 19/84	<100	<100	100	<100	<100	<100	<139								62	23	11	6	1	10	>67
Aug. 24/84	100	<100	<100	100	300	<125	<143								74	86	>300	82	162	>121	>70
Aug. 27/84	<100	<100	600	<100	700	<211	<157								36	26	78	19	69	39	>70
Sept. 1/84	100	<100	200	100	100	<115	<160								60	96	81	75	83	80	>70
May 27/85	40	70	60	50	150	66	66	130	130	30	40	80	70	70	24	NR	23	13	45	24	24
June 1/85	10	20	150	120	80	50	58	280	240	170	260	260	239	129	90	92	56	>300	>300	>133	>62
June 3/85	50	140	90	70	40	71	62	40	40	120	30	70	53	96	56	76	36	89	76	64	>63
June 7/85	<10	10	<10	10	10	<10	<39	<10	<10	10	20	20	<13	<58	11	21	26	16	44	21	>47
June 9/85	200	180	220	270	280	227	<55	420	180	140	90	320	125	<67	277	192	>300	183	196	>225	>65
June 13/85	<10	10	<10	20	10	<11	<43	<10	<10	10	<10	<10	<10	<46	13	<300	29	32	35	>42	>60
June 16/85	10	10	20	30	40	19	<38	10	10	10	10	40	13	<37	24	25	19	25	87	30	>54
June 23/85	<10	90	<10	<10	<10	<16	<34	130	80	160	50	50	84	<42	160	124	102	70	92	105	>39
June 27/85	20	70	60	<10	80	<37	<34	20	40	70	120	130	61	<46	144	146	100	108	98	117	>64
June 29/85	40	<10	10	30	10	<16	<29	20	10	120	60	<10	27	<42	>300	120	90	142	58	>122	>75
July 1/85	20	<10	10	<10	<10	<10	<27	10	20	30	20	20	19	<38	19	18	16	14	28	18	>65
July 7/85	30	50	40	20	<10	<26	<22	30	50	20	10	10	20	<25	74	84	68	42	36	58	>60
July 11/85	100	100	130	190	210	139	<23	90	160	200	180	90	136	<29	183	157	167	146	190	168	>65
July 13/85	210	280	250	120	270	217	<30	100	790	310	260	440	309	<40	580	>600	460	412	480	>490	>82
July 15/85	180	120	190	120	160	151	<40	230	180	150	220	250	203	<56	494	398	442	342	470	422	>106
July 20/85	170	240	270	200	200	213	<52	80	310	280	270	440	242	<78	>300	239	236	>300	>300	>274	>135
July 22/85	150	220	280	200	310	225	<60	310	280	230	330	210	268	<88	>300	>300	>300	>300	>300	>300	>147
July 28/85	200	100	120	450	540	226	<85	390	310	110	370	540	305	<106	>300	224	>300	>300	>300	>284	>168
Aug. 1/85	<10	<10	<10	10	20	<11	<74	<10	<10	20	10	10	<11	<96	47	64	87	46	45	56	>146
Aug. 4/85	20	70	160	170	100	82	<92	80	70	150	50	80	80	<113	>300	>300	>300	>300	>300	>300	>198
Aug. 10/85	520	560	420	460	460	481	<127	430	440	420	280	260	357	<156	>300	>300	>300	>300	>300	>300	>239
Aug. 12/85	30	60	20	60	80	45	<112	80	70	60	60	10	46	<138	139	136	107	136	153	>133	>233
Aug. 18/85	700	900	800	200	400	526	<136	450	520	540	550	550	520	<141	1640	2000	1880	1860	2120	1893	>272
Aug. 22/85	120	110	230	60	50	98	<123	60	40	270	130	90	122	<129	230	250	330	210	100	209	>263
Aug. 24/85	140	130	120	140	170	139	<116	170	70	160	140	180	137	<130	960	810	730	840	810	827	>299

Table 4a: continued.

Date	Fecal Coliform 1	2	3	4	5	Geo. Mean	30-Day Geo. Mean	Escherichia coli 1	2	3	4	5	Geo. Mean	30-Day Geo. Mean	Fecal Streptococcus 1	2	3	4	5	Geo. Mean	30-Day Geo. Mean
June 12/86	<10	10	20	<10	<30	<16	<16								<10	50	40	20	50	<34	<34
June 15/86	<10	<10	<10	<10	10	<10	<13	<10	<10	<10	<10	10	<10		<10	20	10	30	30	<20	<54
June 19/86	10	10	10	30	50	17	<14								300	310	300	350	360	323	<55
June 21/86	10	40	10	<10	10	<13	<13								10	10	10	50	10	14	<39
June 23/86	120	140	150	150	120	135	<21								730	620	640	590	630	640	<68
June 28/86	<10	10	10	20	10	<11	<19								20	40	10	<10	<10	<15	<53
June 30/86	30	70	30	40	50	42	<21								50	30	120	80	90	67	<55
July 5/86	130	60	200	150	10	75	<25	170	200	120	170	180	166		290	560	720	550	450	492	<72
July 12/86	100	120	50	100	50	79	<29								220	460	230	170	140	224	<82
July 17/86	790	620	640	400	710	616	<52								1510	1430	1350	1260	1650	1434	<161
July 19/86	20	10	50	50	<10	<22	<47								200	240	220	800	110	248	<169
July 25/86	120	160	70	170	200	136	<66								310	230	160	710	590	343	<201
July 27/86	110	40	<10	10	40	<28	<59								570	110	220	320	640	309	<213
Aug. 1/86	30	90	50	40	80	53	<74								70	900	70	220	240	188	360
Aug. 3/86	<10	20	50	40	50	<29	<71								30	40	40	90	70	50	281
Aug. 8/86	10	50	40	30	60	33	<70	70	60	50	40	70	57		280	230	320	290	430	303	264
Aug. 17/86	130	50	100	220	130	113	<73								80	190	90	80	190	115	243
Aug. 21/86	<10	20	20	30	40	<22	<54								10	20	20	30	20	19	131
Aug. 23/86	130	40	70	30	10	41	<52								410	360	210	240	270	289	144
June 4/87	80	70	90	150	90	92	92								80	70	90	150	90	92	92
June 7/87	20	<10	20	10	10	<13	<35								20	20	40	40	20	26	49
June 11/87	46	38	52	28	30	38	<36								20	20	50	60	30	33	43
June 13/87	140	120	140	150	220	151	<51								120	140	100	190	170	140	58
June 15/87	40	10	10	10	50	18	<42								<10	<10	10	30	50	<17	<45
June 19/87	<10	<10	<10	<10	<10	<10	<33								10	<10	50	30	<10	<17	<39
June 21/87	30	10	10	10	<10	<12	<29								10	20	20	<10	10	<13	<33
July 3/87	<10	60	40	20	60	<31	<29								120	230	170	160	100	150	<40
July 17/87	300	380	160	310	320	283	<44								1280	1420	1470	940	220	888	<74
July 25/87	<10	<10	20	10	10	<11	<62								80	20	100	10	50	38	171
July 30/87	16	14	2	8	10	8	<56								168	56	80	170	110	107	152
Aug. 8/87	8	18	18	24	14	15	<47								44	52	62	52	118	61	122

Table 4b: Field observations recorded during the microbiological sample collections at Matlock Beach, Lake Winnipeg.

Date	Time (CDT)	Air Temp. (°C)	Water Temp. (°C)	Wind Direction	Cloud Cover (%)	Recent Precipitation	Visible Algae	Wave Action	Turbidity	Bather Load	Water Colour	Other
May 16/84	12:00	15	12	onshore	100	none	light	light	moderate	0	light	
June 1/84	8:35	19	19	onshore	10	light	light	light	extensive	0	clear	
June 4/84	12:30	17	18	onshore	75	none	light	light	moderate	0	light	
June 9/84	8:45	10	14	onshore	100	moderate	light	heavy	moderate	0	light	
June 14/84	11:10	18	18	offshore	75	none	light	light	moderate	0	light	
June 17/84	9:00	17	22	offshore	30	moderate	light	none	extensive	0	light	
June 22/84	11:55	23	22	offshore	100	heavy	moderate	none	extensive	0	light	
June 25/84	9:50	17	19	onshore	40	none	moderate	light	extensive	0	light	
June 30/84	10:30	22	21	onshore	0	none	light	heavy	extensive	8	light	
July 5/84	9:20	16	19	onshore	50	none	moderate	heavy	extensive	0	light	
July 8/84	10:25	20	19	offshore	10	light	light	none	extensive	4	light	
July 13/84	9:15	18	22	onshore	60	light	light	moderate	extensive	0	light	
July 16/84	10:55	18	22	offshore	80	light	light	light	extensive	0	light	
July 21/84	9:30	20	22	offshore	80	light	light	none	extensive	0	light	
July 26/84	10:50	23	23	onshore	20	none	light	light	extensive	6	light	
July 29/84	9:25	21	23	onshore	70	none	light	light	extensive	0	light	
Aug. 3/84	10:45	24	24	onshore	10	none	light	none	moderate	10	light	
Aug. 6/84	8:55	22	22	offshore	0	light	light	none	extensive	2	light	
Aug. 11/84	10:35	19	21	onshore	10	none	light	heavy	extensive	4	light	
Aug. 16/84	9:40	16	21	onshore	80	heavy	none	heavy	extensive	0	light	
Aug. 19/84	11:20	19	22	offshore	30	none	moderate	light	slight	30	light	
Aug. 24/84	9:35	18	20	onshore	30	none	light	light	extensive	0	light	
Aug. 27/84	10:40	23	21	onshore	10	none	light	light	moderate	2	light	
Sept. 3/84	-	-	-	-	-	-	-	-	-	-	-	
May 27/85	11:10	15	13	onshore	10	none	none	moderate	moderate	0	light	
June 1/85	8:55	6	13	onshore	80	heavy	none	crests	extreme	0	light	
June 3/85	9:30	6	11	onshore	100	none	none	light	extreme	0	light	
June 7/85	10:40	20	17	onshore	10	light	none	light	moderate	0	clear	
June 9/85	8:20	13	13	onshore	90	moderate	none	crests	extreme	0	light	
June 13/85	11:00	20	18	onshore	10	none	none	light	extreme	0	light	
June 16/85	8:40	14	17	offshore	80	moderate	none	light	extreme	0	light	
June 23/85	10:25	14	14	offshore	30	none	light	crests	extreme	0	light	
June 27/85	8:45	10	15	onshore	100	light	none	crests	extreme	0	light	
June 29/85	9:15	14	15	onshore	100	light	light	moderate	extreme	0	light	
July 1/85	8:15	15	15	offshore	10	none	none	none	extreme	0	light	
July 7/85	9:45	24	22	onshore	10	none	light	light	extreme	20	light	
July 11/85	8:20	17	18	onshore	90	none	light	light	extreme	0	light	
July 13/85	9:35	17	20	onshore	50	light	light	crests	extreme	2	light	
July 15/85	8:45	16	19	onshore	30	light	light	moderate	extreme	0	light	
July 20/85	10:15	19	21	onshore	10	none	light	light	extreme	0	light	
July 22/85	8:40	15	18	onshore	80	none	light	moderate	extreme	0	light	
July 28/85	10:15	14	18	offshore	80	none	light	crests	extreme	0	light	
Aug. 1/85	8:40	16	20	offshore	10	none	light	none	moderate	0	light	
Aug. 4/85	9:40	20	20	offshore	100	moderate	light	moderate	extreme	0	light	
Aug. 10/85	9:20	15	18	offshore	10	none	moderate	none	extreme	0	light	
Aug. 12/85	10:10	12	17	onshore	100	moderate	light	crests	extreme	0	light	
Aug. 18/85	8:30	10	13	onshore	100	heavy	light	crests	extreme	0	light	
Aug. 22/85	10:05	17	17	onshore	100	light	light	crests	extreme	0	light	
Aug. 24/85	8:25	17	15	onshore	100	light	heavy	light	moderate	0	light	

Table 4b: continued.

Date	Time (CDT)	Air Temp. (°C)	Water Temp. (°C)	Wind Direction	Cloud Cover (%)	Recent Precipitation	Visible Algae	Wave Action	Turbidity	Bather Load	Water Colour	Other
June 12/86	10:45	17	17	offshore	50	light	none	light	extreme	0	light	
June 15/86	8:50	10	17	offshore	100	light	light	light	moderate	0	light	
June 19/86	11:05	25	18	onshore	20	none	light	moderate	extreme	2	light	
June 21/86	8:35	19	20	offshore	100	moderate	light	none	moderate	0	light	
June 23/86	10:45	11	17	onshore	100	none	light	crests	extreme	0	light	
June 28/86	8:20	16	18	offshore	0	none	light	none	moderate	0	light	
June 30/86	10:40	18	18	offshore	100	none	light	light	moderate	4	light	
July 5/86	8:25	17	20	onshore	100	heavy	light	crests	extreme	0	light	
July 12/86	9:45	16	19	onshore	100	heavy	light	crests	extreme	0	light	
July 17/86	9:25	17	20	onshore	100	moderate	light	moderate	extreme	2	light	
July 19/86	9:25	17	21	onshore	30	none	light	light	extreme	0	light	
July 25/86	9:25	17	22	onshore	50	light	light	light	moderate	0	light	
July 27/86	9:40	18	22	onshore	100	light	light	moderate	extreme	0	light	
Aug. 1/86	9:25	16	20	onshore	100	heavy	light	crests	extreme	0	light	
Aug. 3/86	9:35	17	21	onshore	70	moderate	light	moderate	extreme	2	light	
Aug. 8/86	9:30	16	21	onshore	10	none	light	light	moderate	0	light	
Aug. 17/86	8:20	10	21	offshore	20	none	light	light	extreme	1	light	
Aug. 21/86	10:40	13	21	offshore	0	none	moderate	light	moderate	0	light	
Aug. 23/86	8:25	9	19	offshore	0	none	light	light	extreme	0	light	
June 4/87	10:20	14	13	onshore	30	moderate	light	crests	extreme	0	light	
June 7/87	8:25	12	17	onshore	20	light	light	moderate	extreme	0	light	
June 11/87	9:50	18	19	offshore	100	heavy	light	light	extreme	0	light	
June 13/87	8:20	20	20	offshore	0	none	light	light	extreme	0	light	
June 15/87	10:05	22	20	onshore	70	none	light	moderate	extreme	0	light	
June 19/87	10:05	24	22	onshore	10	none	light	light	slight	0	light	
June 21/87	10:25	24	22	offshore	50	moderate	light	light	extreme	6	light	
July 3/87	9:35	18	20	offshore	10	light	light	light	extreme	4	light	
July 17/87	10:45	18	19	onshore	50	none	light	moderate	extreme	3	light	
July 25/87	10:45	20	20	onshore	0	none	light	moderate	moderate	3	light	
July 30/87	9:30	22	23	offshore	30	none	heavy	light	extreme	2	light	
Aug. 8/87	10:10	18	23	offshore	10	none	light	light	moderate	1	light	

Table 5a: Fecal coliform, Escherichia coli and fecal streptococcus characteristics of Sans Souci Beach, Lake Winnipeg.

Date	Fecal Coliform 1	2	3	4	5	Geo. Mean	30-Day Geo. Mean	Escherichia coli 1	2	3	4	5	Geo. Mean	30-Day Geo. Mean	Fecal Streptococcus 1	2	3	4	5	Geo. Mean	30-Day Geo. Mean
May 16/84	<100	<100	<100	<100	<100	<100	<100								<1	1	<1	<1	<1	<1	<1
June 1/84	<100	<100	<100	<100	<100	<100	<100								90	60	39	58	30	52	7
June 4/84	<100	<100	100	<100	<100	<100	<100								4	2	18	17	61	11	8
June 9/84	<100	<100	300	100	<100	<125	<106								208	155	500	600	700	368	21
June 14/84	<100	<100	<100	<100	<100	<100	<105								3	5	9	3	5	5	16
June 17/84	300	<100	<100	200	600	<205	<121								246	150	176	209	174	188	45
June 22/84	<100	<100	<100	<100	<100	<100	<117								95	93	73	81	128	92	50
June 25/84	<100	<100	<100	<100	<100	<100	<114								102	103	61	60	99	82	54
June 30/84	<100	<100	<100	<100	<100	<100	<112								50	38	52	52	60	50	54
July 5/84	<100	<100	<100	<100	<100	<100	<112								>300	270	282	254	>300	>281	>66
July 8/84	<100	100	<100	<100	<100	<100	<112								40	20	16	10	20	19	>71
July 13/84	200	<100	200	<100	<100	<132	<113								130	159	168	162	145	152	>64
July 16/84	600	300	700	200	100	<302	<130								238	240	204	226	218	225	>103
July 21/84	<100	100	<100	<100	100	<100	<119								56	27	14	13	25	23	>80
July 26/84	<100	100	<100	<100	<100	<100	<119								9	9	27	83	71	26	>68
July 29/84	<100	<100	100	<100	<100	<100	<119								62	132	52	48	54	64	>66
Aug. 3/84	<100	<100	<100	<100	<100	<100	<119								18	41	19	27	28	25	>61
Aug. 6/84	<100	<100	100	<100	<100	<100	<119								51	50	75	59	59	58	50
Aug. 11/84	<100	200	<100	200	<100	<132	<123								56	32	>300	41	39	61	>58
Aug. 16/84	200	600	300	100	200	235	<132								256	218	184	148	202	198	>60
Aug. 19/84	<100	<100	<100	<100	<100	<100	<115								4	34	10	15	6	10	>41
Aug. 24/84	<100	<100	<100	<100	<100	<100	<115								52	204	50	60	44	68	>46
Aug. 27/84	100	<100	<100	<100	<100	<100	<115								20	14	5	6	2	7	>39
Sept. 1/84	<100	<100	100	<100	<100	<100	<115								27	45	42	30	38	36	>37
May 27/85	20	10	20	10	<10	<13	<13	20	100	100	<10	<10	<29	<29	3	2	3	7	5	4	4
June 1/85	270	280	190	200	280	240	<56	190	300	100	210	210	191	<74	76	65	139	63	75	80	17
June 3/85	20	160	20	20	30	33	<47	210	40	<10	20	<10	<28	<54	37	29	21	27	33	29	20
June 7/85	<10	<10	<10	<10	<10	<10	<32	<10	<10	<10	<10	<10	<10	<35	9	10	10	35	59	18	20
June 9/85	210	200	290	250	240	236	<48	280	230	180	200	160	206	<50	166	160	163	181	234	179	31
June 13/85	10	<10	<10	<10	<10	<10	<37	<10	20	<10	<10	<10	<11	<39	>300	213	>300	17	12	>83	>36
June 16/85	160	240	100	110	130	141	<45	90	120	130	70	120	103	<45	57	59	78	62	54	61	>39
June 23/85	60	50	60	60	<10	<40	<44	70	120	130	110	80	99	<50	94	100	186	132	190	134	>46
June 27/85	30	50	<10	40	<10	<23	<41	30	60	50	20	60	41	<49	104	100	126	122	102	110	>50
June 29/85	<10	<10	<10	<10	<10	<10	<40	<10	40	10	<10	30	<16	<46	26	18	44	12	24	23	>62
July 1/85	40	<10	10	50	20	<21	<37	50	30	10	30	30	27	<43	27	40	25	24	26	28	>57
July 7/85	130	80	40	10	20	38	<31	240	80	30	110	40	76	<41	83	58	31	42	113	59	>65
July 11/85	<10	20	20	50	40	<24	<27	30	10	10	50	30	21	<37	77	63	66	96	79	75	>69
July 13/85	30	50	100	70	50	55	<29	80	80	50	140	60	77	<40	88	78	108	94	148	101	72
July 15/85	100	60	40	30	40	49	<34	40	100	50	60	50	57	<48	211	212	234	148	194	198	79
July 20/85	<10	20	10	10	10	<11	<26	30	20	20	10	20	19	<40	201	96	95	117	95	115	85
July 22/85	130	120	90	210	120	129	<31	120	80	120	70	110	98	<43	72	92	72	68	83	77	84
July 28/85	40	40	50	50	60	47	<32	20	30	10	10	100	23	<37	146	161	222	219	193	183	85
Aug. 1/85	<10	10	<10	<10	<10	<10	<32	<10	<10	<10	30	<10	<12	<36	9	13	28	22	31	19	75
Aug. 4/85	50	130	110	110	130	100	<38	110	70	80	70	50	74	<40	86	78	92	76	90	84	85
Aug. 10/85	100	80	80	100	100	91	<42	150	60	70	90	140	95	<44	169	128	161	129	177	151	94
Aug. 12/85	60	10	<10	20	30	<21	<41	50	60	30	30	20	35	<47	79	75	74	77	75	76	94
Aug. 18/85	600	900	900	1100	1000	882	<57	820	380	790	820	920	714	<52	>3000	1940	2250	2290	2170	>2305	>127
Aug. 22/85	120	110	230	60	50	98	<75	60	140	270	130	90	122	<66	230	250	330	210	100	209	>137
Aug. 24/85	40	60	80	40	60	54	<67	90	60	80	80	30	64	<62	360	370	260	370	310	331	>164

Table 5a: continued.

Date	Fecal Coliform 1	2	3	4	5	Geo. Mean	30-Day Geo. Mean	Escherichia coli 1	2	3	4	5	Geo. Mean	30-Day Geo. Mean	Fecal Streptococcus 1	2	3	4	5	Geo. Mean	30-Day Geo. Mean
June 12/86	60	10	20	20	30	28	28														
June 15/86	<10	<10	<10	<10	<10	<10	<19	10	<10	<10	<10	10	<10		10	10	10	<10	<10	<10	<10
June 19/96	<10	<10	10	<10	10	<10	<13								20	<10	10	20	10	<14	<12
June 21/86	<10	<10	<10	10	10	<10	<12								10	20	10	20	10	13	<12
June 23/86	90	70	40	100	120	79	<18								30	20	50	10	10	20	<14
June 28/86	<10	10	20	<10	<10	<11	<17								280	260	320	260	220	266	<25
June 30/86	40	20	<10	<10	30	<19	<17								10	40	20	30	30	24	<24
July 5/86	30	60	60	40	10	34	<18	120	90	140	140	290	144		30	10	30	<10	40	<16	<24
July 12/86	40	40	50	10	20	28	<19								210	170	170	230	300	211	<31
July 17/86	190	230	120	270	200	195	<28								80	60	90	100	140	90	<49
July 19/86	10	30	20	<10	<10	<14	<26								190	230	120	270	200	195	<58
July 25/86	40	20	10	30	70	28	<29								20	20	20	20	<10	<17	<51
July 27/86	<10	20	10	<10	10	<11	<26								140	110	170	180	190	155	<65
Aug. 1/86	10	<10	40	40	20	<20	<29								20	30	10	30	170	31	<59
Aug. 3/86	20	20	20	<10	20	<17	<27								40	<10	20	70	20	<26	<70
Aug. 8/86	<10	<10	<10	<10	<10	<10	<23	<10	30	<10	<10	<10	<12		10	<10	<10	20	20	<13	<57
Aug. 17/86	90	30	40	50	50	49	<25								20	10	50	<10	20	<18	<42
Aug.21/86	10	<10	20	<10	10	<11	<18								40	30	40	50	10	30	<36
Aug. 23/86	70	30	60	40	30	43	<20								10	20	10	20	40	17	<29
															30	30	100	40	40	43	<30
June 4/87	10	20	20	40	30	22	22														
June 7/87	<10	10	<10	10	20	<11	<16								140	280	130	140	120	154	154
June 11/87	44	22	34	38	40	35	<21								40	20	<10	10	<10	<15	<48
June 13/87	160	180	130	200	210	173	<35								30	20	20	<10	30	<21	<36
June 15/87	10	<10	30	40	10	<16	<30								200	180	210	180	180	190	<55
June 19/87	<10	10	20	10	20	<13	<26								10	30	40	<10	<10	<16	<43
June 21/87	10	<10	20	20	10	<13	<24								<10	30	<10	10	<10	<12	<35
July 3/87	20	10	10	<10	40	<15	<22								<10	10	20	<10	40	<15	<31
July 17/87	40	50	20	50	90	45	<19								30	60	30	20	40	34	<31
July 25/87	<10	<10	<10	<10	<10	<10	<19								200	210	340	310	320	269	<36
July 30/87	6	10	28	28	54	19	<19								90	30	20	40	10	29	64
Aug. 8/87	16	4	2	6	<2	<4	<14								168	56	80	170	110	107	73
															10	10	12	14	10	11	55

Table 5b: Field observations recorded during the microbiological sample collections at Sans Souci Beach, Lake Winnipeg.

Date	Time (CDT)	Air Temp. (°C)	Water Temp. (°C)	Wind Direction	Cloud Cover (%)	Recent Precipitation	Visible Algae	Wave Action	Turbidity	Bather Load	Water Colour	Other
May 16/84	13:00	20	13	onshore	50	none	light	light	extensive	0	light	
June 1/84	8:10	19	16	onshore	10	light	light	light	extensive	0	clear	
June 4/84	13:00	17	17	onshore	75	none	light	light	slight	0	light	
June 9/84	8:20	10	15	onshore	100	moderate	light	heavy	moderate	0	light	
June 14/84	11:40	20	18	offshore	75	none	light	light	moderate	0	light	
June 17/84	8:40	16	19	onshore	50	moderate	light	light	moderate	0	light	
June 22/84	11:15	24	21	offshore	90	heavy	light	none	moderate	0	light	
June 25/84	9:20	16	20	onshore	40	none	light	light	extensive	0	light	
June 30/84	10:50	23	24	onshore	0	none	moderate	heavy	extensive	6	light	
July 5/84	9:00	16	20	onshore	60	none	loght	heavy	extensive	0	light	
July 8/84	10:40	20	20	offshore	10	light	light	none	moderate	8	light	
July 13/84	9:00	18	22	onshore	60	light	light	moderate	extensive	0	light	
July 16/84	11:15	20	21	offshore	80	light	light	moderate	extensive	28	light	
July 21/84	9:10	20	20	offshore	80	light	light	none	extensive	0	light	
July 26/84	11:10	23	23	onshore	20	none	light	light	moderate	22	light	
July 29/84	9:10	21	21	onshore	70	none	light	light	moderate	0	light	
Aug. 3/84	11:10	24	24	onshore	10	none	light	none	moderate	12	light	
Aug. 6/84	8:40	22	22	offshore	0	light	light	none	extensive	2	light	
Aug. 11/84	10:50	20	20	onshore	10	none	light	heavy	extensive	12	light	
Aug. 16/84	9:15	16	21	onshore	80	heavy	none	moderate	extensive	0	light	
Aug. 19/84	11:50	19	23	offshore	30	none	light	light	slight	50	light	
Aug. 24/84	9:20	17	19	onshore	30	none	light	light	moderate	2	light	
Aug. 27/84	11:00	24	20	onshore	10	none	light	light	moderate	0	light	
Sept. 1/84	-	-	-	-	-	-	-	-	-	-	-	
May 27/85	11:35	15	14	onshore	10	none	none	moderate	moderate	0	light	
June 1/85	8:30	6	13	onshore	80	heavy	none	crests	extreme	0	light	
June 3/85	9:00	6	12	onshore	100	none	none	light	extreme	0	light	
June 7/85	11:15	20	17	onshore	10	light	none	light	moderate	0	clear	
June 9/85	8:00	13	13	onshore	90	moderate	none	crests	extreme	0	light	
June 13/85	11:20	22	18	onshore	10	none	none	moderate	extreme	0	light	
June 16/85	8:15	13	17	offshore	90	moderate	none	none	extreme	0	light	
June 23/85	10:45	14	14	offshore	50	none	light	crests	extreme	0	light	
June 27/85	8:20	10	15	onshore	100	light	none	crests	extreme	0	light	
June 29/85	9:30	14	15	onshore	100	light	light	moderate	extreme	0	light	
July 1/85	8:00	14	14	offshore	10	none	none	none	extreme	0	light	
July 7/85	10:05	24	22	onshore	10	none	light	light	extreme	3	light	
July 11/85	8:05	17	19	onshore	90	none	light	light	extreme	0	light	
July 13/85	9:50	17	21	onshore	50	light	light	crests	extreme	0	light	
July 15/85	8:30	16	19	onshore	30	light	light	moderate	extreme	0	light	
July 20/85	10:30	20	20	onshore	10	none	light	moderate	extreme	0	light	
July 22/85	8:20	15	18	onshore	80	none	light	moderate	extreme	0	light	
July 28/85	10:35	14	18	offshore	100	none	light	crests	extreme	0	light	
Aug. 1/85	8:15	15	19	offshore	10	none	light	none	moderate	0	light	
Aug. 4/85	10:00	20	20	offshore	100	moderate	light	moderate	extreme	0	light	
Aug. 10/85	9:00	15	18	onshore	10	none	moderate	none	extreme	0	light	
Aug. 12/85	10:35	12	18	onshore	100	moderate	light	crests	extreme	0	light	
Aug. 18/85	8:10	10	13	onshore	100	heavy	light	crests	extreme	0	light	
Aug. 22/85	10:30	17	16	onshore	100	light	light	crests	extreme	0	light	
Aug. 24/85	8:05	17	15	onshore	100	light	moderate	light	moderate	0	light	

Table 5b: continued.

Date	Time (CDT)	Air Temp. (°C)	Water Temp. (°C)	Wind Direction	Cloud Cover (%)	Recent Precipitation	Visible Algae	Wave Action	Turbidity	Bather Load	Water Colour	Other
June 12/86	11:10	18	16	offshore	50	light	none	light	extreme	0	light	
June 15/86	8:30	10	17	offshore	100	light	light	light	moderate	0	light	
June 19/86	11:30	25	18	osnhore	20	none	light	moderate	extreme	2	light	
June 21/86	8:15	19	19	offshore	100	moderate	light	none	moderate	0	light	
June 23/86	11:10	11	18	onshore	100	none	light	crests	extreme	0	light	
June 28/86	8:00	16	18	offshore	0	none	light	none	moderate	0	light	
June 30/86	11:05	18	19	offshore	100	none	light	light	moderate	3	light	
July 5/86	8:00	16	20	onshore	100	heavy	light	crests	extreme	0	light	
July 12/86	10:00	16	18	onshore	100	heavy	light	crests	extreme	0	light	
July 17/86	9:00	17	20	onshore	100	moderate	light	moderate	extreme	0	light	
July 19/86	9:45	18	21	onshore	30	none	light	light	extreme	0	light	
July 25/86	9:05	17	22	onshore	50	light	light	light	moderate	0	light	
July 27/86	10:00	19	22	onshore	100	light	light	moderate	extreme	0	light	
Aug. 1/86	9:00	16	20	onshore	100	heavy	light	crests	extreme	0	light	
Aug. 3/86	10:00	18	21	onshore	50	moderate	light	moderate	extreme	0	light	
Aug. 8/86	9:10	15	21	onshore	10	none	light	light	moderate	0	light	
Aug.17/86	8:05	10	21	offshore	20	none	light	light	moderate	0	light	
Aug. 21/86	10:55	14	20	offshore	0	none	moderate	light	moderate	0	light	
Aug. 23/86	8:10	9	19	offshore	0	none	light	light	moderate	0	light	
June 4/87	10:40	16	14	onshore	30	moderate	light	crests	extreme	0	light	
June 7/87	8:10	12	17	onshore	20	light	light	moderate	moderate	2	light	
June 11/87	10:10	18	17	offshore	100	heavy	light	none	extreme	0	light	
June 13/87	8:05	19	19	offshore	10	none	light	light	moderate	1	light	
June 15/87	10:20	23	21	onshore	70	none	light	moderate	extreme	0	light	
June 19/87	9:45	23	22	onshore	10	none	light	light	slight	0	light	
June 21/87	10:40	23	22	offshore	50	moderate	light	light	extreme	22	light	
July 3/87	9:20	18	20	offshore	10	light	light	light	moderate	10	light	
July 17/87	11:00	18	20	onshore	70	none	light	moderate	extreme	2	light	
July 25/87	11:05	22	20	onshore	0	none	light	light	moderate	1	light	
July 30/87	9:15	22	24	offshore	30	none	heavy	light	moderate	12	light	
Aug. 8/87	10:25	18	24	offshore	10	none	moderate	light	slight	10	light	

Table 6a: Fecal coliform, Escherichia coli and fecal streptococcus characteristics of Victoria Beach (Club House), Lake Winnipeg.

Date	Fecal Coliform 1	2	3	4	5	Geo. Mean	30-Day Geo. Mean	Escherichia coli 1	2	3	4	5	Geo. Mean	30-Day Geo. Mean	Fecal Streptococcus 1	2	3	4	5	Geo. Mean	30-Day Geo. Mean
June 21/84	<100	<100	<100	<100	<100	<100	<100								18	12	38	30	31	24	24
June 24/84	<100	<100	<100	<100	<100	<100	<100								35	40	48	38	33	38	30
June 29/84	<100	<100	<100	<100	<100	<100	<100								31	21	38	14	14	22	27
July 2/84	<100	<100	<100	<100	<100	<100	<100								5	11	14	14	7	9	21
July 7/84	<100	<100	<100	<100	<100	<100	<100								9	10	12	20	23	14	19
July 12/84	<100	<100	<100	<100	<100	<100	<100								67	63	44	36	26	44	22
July 15/84	300	700	400	300	200	347	<119								111	120	108	121	119	116	28
July 20/84	200	100	<100	<100	<100	<115	<119								45	21	26	38	62	36	29
July 23/84	<100	<100	<100	200	<100	<115	<121								21	22	20	9	8	15	27
July 28/84	<100	100	200	400	400	<200	<132								31	41	46	50	70	46	28
Aug. 2/84	<100	<100	<100	<100	<100	<100	<132								21	7	8	20	57	17	27
Aug. 5/84	<100	<100	100	<100	<100	<100	<132								29	21	18	29	32	25	30
Aug. 10/84	<100	<100	<100	<100	<100	<100	<132								2	2	40	2	4	4	26
Aug. 13/84	<100	<100	<100	<100	<100	<100	<132								1	>300	6	12	7	>11	>22
Aug. 18/84	<100	<100	<100	<100	<100	<100	<113								8	6	12	14	12	10	>16
Aug. 23/84	<100	<100	<100	<100	<100	<100	<111								24	44	72	78	114	58	>17
Aug. 26/84	100	<100	<100	<100	<100	<100	<110								26	19	29	23	25	24	>18
Aug. 30/84	<100	<100	<100	100	<100	<100	<100								128	122	106	64	126	106	>20
Sept. 3/84	<100	<100	<100	<100	<100	<100	<100								80	84	50	38	54	59	>24
May 28/85	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<1	<1	<1	<1	<1	<1	<1
May 30/85	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	10	<10	<10	<1	<1	<1	1	<1	<1	<1
June 2/85	30	20	<10	10	20	<16	<12	20	20	<10	<10	20	<15	<11	38	33	30	27	35	32	<18
June 8/85	30	NR	20	50	<10	<23	<14	20	30	10	30	30	22	<14	14	15	10	9	4	9	<4
June 15/85	<10	<10	<10	10	20	<11	<13	20	<10	10	<10	<10	<11	<13	2	7	3	5	11	5	<4
June 24/85	<10	<10	10	<10	<10	<10	<13	<10	<10	<10	<10	<10	<10	<13	2	4	121	7	12	9	<5
June 30/85	<10	<10	<10	<10	<10	<10	<13	<10	<10	<10	<10	<10	<10	<13	2	9	<1	<1	1	<2	<4
July 8/85	20	40	20	10	20	<20	<14	10	10	20	10	<10	<10	<12	13	14	12	19	20	15	4
July 14/85	<10	<10	10	<10	<10	<10	<11	10	10	<10	<10	20	<10	<11	31	26	24	17	31	25	<5
July 21/85	250	230	120	120	150	166	<20	790	340	160	90	130	219	<20	50	99	67	103	96	80	<14
Aug. 3/85	<10	<10	<10	<10	<10	<10	<24	<10	10	<10	10	<10	<10	<21	20	37	42	74	31	37	33
Aug. 11/85	<10	<10	<10	<10	<10	<10	<20	<10	<10	<10	<10	<10	<10	<20	11	12	18	9	43	16	28
Aug. 23/85	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	4	6	9	8	4	6	15
June 13/86	<10	<10	<10	<10	30	<14	<14								<10	<10	<10	10	10	<10	<10
June 16/86	<10	<10	30	10	10	<14	<14	270	190	200	230	320	222		50	40	40	50	30	41	<20
June 20/86	<10	<10	<10	<10	<10	<10	<12								<10	<10	20	10	20	<13	<18
June 27/86	<10	<10	10	<10	10	<10	<11								20	20	20	30	10	19	<18
June 29/86	10	<10	<10	<10	10	<10	<11								20	10	50	10	<10	<16	<17
July 4/86	<10	<10	<10	<10	<10	<10	<11	<10	10	<10	<10	<10	<10		50	10	10	<10	10	<14	<17
July 13/86	<10	<10	<10	<10	<10	<10	<11								<10	<10	<10	<10	10	<10	<16
July 20/86	30	40	60	30	30	37	<12								190	210	280	230	240	228	<22
July 26/86	20	10	<10	10	20	<14	<13								80	20	20	30	20	29	<25
Aug. 4/86	<10	<10	<10	<10	<10	<10	<14								30	20	<10	20	<10	<16	<27
Aug. 10/86	50	40	70	70	90	62	<18	160	250	580	230	240	243		140	110	160	120	140	133	<43
Aug. 16/86	<10	10	<10	10	20	<11	<18								220	80	60	40	140	90	<66
Aug. 22/86	10	<10	<10	20	<10	<11	<15								20	60	110	40	30	44	<48

Table 6a: continued.

Date	Fecal Coliform 1	2	3	4	5	Geo. Mean	30-Day Geo. Mean	Escherichia coli 1	2	3	4	5	Geo. Mean	30-Day Geo. Mean	Fecal Streptococcus 1	2	3	4	5	Geo. Mean	30-Day Geo. Mean
June 5/87	<10	<10	<10	<10	<10	<10	<10								<10	<10	<10	<10	<10	<10	<10
June 8/87	<10	<10	<10	10	<10	<10	<10								<10	20	<10	<10	10	<11	<11
June 12/87	10	20	20	50	10	18	<12								10	20	40	20	20	20	<13
June 20/87	<10	<10	<10	<10	<10	<10	<12								<10	<10	<10	<10	30	<12	<13
June 27/87	10	<10	<10	<10	<10	<10	<11								60	40	30	10	10	24	<15
July 5/87	<10	<10	10	10	10	<10	<11								110	110	70	70	60	82	<20
July 10/87	<10	10	<10	<10	<10	<10	<11								<10	<10	<10	<10	10	<10	<22
July 16/87	90	<10	20	20	10	<20	<12								70	50	60	150	70	74	<29
July 18/87	30	10	50	20	30	25	<13								50	70	90	40	60	60	<33
Aug. 2/87	70	190	100	60	140	102	<22								60	30	110	70	110	69	<49
Aug. 9/87	40	60	20	20	30	31	<28								120	200	80	150	120	128	<54
Aug. 17/87	30	30	70	20	60	38	42								260	290	280	330	310	293	115

Table 6b: Field observations recorded during the microbiological sample collections at Victoria Beach (Club House), Lake Winnipeg.

Date	Time (CDT)	Air Temp. (°C)	Water Temp. (°C)	Wind Direction	Cloud Cover (%)	Recent Precipitation	Visible Algae	Wave Action	Turbidity	Bather Load	Water Colour	Other
June 21/84	12:00	21	21	onshore	90	none	light	light	slight	0	clear	
June 24/84	9:50	17	18	onshore	10	none	none	heavy	extensive	0	light	
June 29/84	12:00	23	22	onshore	0	none	light	crests	extensive	9	light	
July 2/84	9:20	20	21	onshore	20	light	light	heavy	extensive	3	light	
July 7/84	12:25	20	21	onshore	10	none	none	heavy	extensive	10	light	
July 12/84	9:30	19	25	onshore	70	none	light	light	moderate	0	light	
July 15/84	12:00	20	22	onshore	10	light	light	heavy	extensive	6	light	
July 20/84	9:50	18	22	onshore	30	none	light	light	moderate	0	light	
July 23/84	11:50	21	23	onshore	10	none	light	heavy	extensive	6	light	
July 28/84	9:50	20	23	onshore	20	none	light	moderate	moderate	4	light	
Aug. 2/84	12:15	24	24	offshore	0	none	moderate	none	slight	40	light	
Aug. 5/84	9:30	23	23	onshore	10	none	light	moderate	moderate	8	light	
Aug. 10/84	12:30	19	23	offshore	50	none	moderate	light	moderate	24	light	
Aug. 13/84	9:45	19	23	offshore	10	none	moderate	none	slight	0	light	
Aug. 18/84	14:45	24	24	onshore	0	none	light	none	slight	-	light	
Aug. 23/84	9:40	11	21	onshore	10	none	light	heavy	extensive	0	light	
Aug. 26/84	11:20	24	22	onshore	20	light	light	moderate	moderate	10	light	
Aug. 30/84	10:15	11	19	onshore	50	none	light	heavy	slight	0	light	
Sept. 3/84	-	-	-	-	-	-	-	-	-	-	-	
May 28/85	12:30	17	15	onshore	30	none	none	light	slight	3	clear	
May 30/85	8:30	14	13	onshore	50	none	none	moderate	slight	0	clear	
June 2/85	8:45	7	10	onshore	30	moderate	none	crests	moderate	0	light	
June 8/85	11:30	23	16	onshore	70	light	none	moderate	slight	0	clear	
June 15/85	8:45	14	15	onshore	100	heavy	none	light	moderate	0	light	raining
June 24/85	11:30	20	18	onshore	10	none	light	none	moderate	0	light	
June 30/85	8:10	14	15	offshore	50	light	none	none	moderate	0	light	
July 8/85	10:40	23	22	onshore	40	none	light	crests	extreme	2	light	
July 14/85	8:10	16	18	onshore	100	moderate	light	crests	moderate	0	light	raining
July 21/85	11:50	18	20	onshore	20	none	light	crests	moderate	1	light	
Aug. 3/85	10:30	20	20	onshore	100	moderate	light	light	moderate	0	light	
Aug. 11/85	8:30	12	18	offshore	50	none	moderate	light	slight	0	light	
Aug. 23/85	8:30	16	17	onshore	100	heavy	light	light	moderate	0	light	raining
June 13/86	9:20	18	15	onshore	30	light	light	crests	extreme	0	light	
June 16/86	12:35	11	16	onshore	50	light	light	crests	extreme	0	light	
June 20/86	9:20	21	18	offshore	70	moderate	light	none	slight	0	light	
June 27/86	9:10	16	18	onshore	10	none	light	crests	slight	0	light	
June 29/86	10:50	20	17	onshore	0	none	light	moderate	slight	4	light	
July 4/86	12:15	20	21	onshore	0	moderate	light	light	slight	100	light	
July 13/86	8:00	15	16	offshore	100	heavy	light	light	slight	0	light	
July 26/86	8:10	16	21	onshore	100	moderate	moderate	moderate	moderate	0	light	
Aug. 4/86	12:20	22	22	onshore	30	none	light	moderate	moderate	0	light	
Aug. 10/86	10:45	14	20	onshore	100	light	heavy	crests	moderate	0	light	
Aug. 16/86	8:25	12	21	onshore	10	none	heavy	crests	extreme	0	light	
Aug. 22/86	11:55	16	19	onshore	100	moderate	heavy	moderate	extreme	0	light	

Table 6b: continued.

Date	Time (CDT)	Air Temp. (°C)	Water Temp. (°C)	Wind Direction	Cloud Cover (%)	Recent Precipitation	Visible Algae	Wave Action	Turbidity	Bather Load	Water Colour	Other
June 5/87	8:45	10	15	onshore	30	light	moderate	light	slight	0	light	
June 8/87	10:50	20	17	onshore	10	none	light	moderate	slight	0	light	
June 12/87	8:25	22	17	onshore	0	light	light	light	slight	0	light	
June 20/87	12:10	22	21	onshore	10	none	light	crests	moderate	0	light	
June 27/87	11:35	18	19	onshore	10	light	light	crests	moderate	2	light	
July 5/87	9:30	16	20	offshore	40	light	light	moderate	moderate	0	light	
July 10/87	11:25	22	20	onshore	70	moderate	light	moderate	moderate	1	light	
July 16/87	9:25	16	19	onshore	70	light	light	moderate	moderate	1	light	
July 18/87	11:30	19	20	offshore	100	moderate	light	light	moderate	0	light	
Aug. 2/87	9:05	22	24	onshore	50	light	moderate	light	moderate	0	light	
Aug. 9/87	8:45	15	23	onshore	30	none	moderate	moderate	moderate	0	light	
Aug. 17/87	8:45	14	17	onshore	30	heavy	moderate	crests	extreme	0	light	

Table 7a: Fecal coliform, fecal streptococcus, Pseudomonas aeruginosa and Staphylococcus aureus characteristics of Victoria Beach (ski dock area), Lake Winnipeg.

Date	Fecal Coliform 1	2	3	4	5	6	Geo. Mean	30-Day Geo. Mean	Fecal Streptococcus 1	2	3	4	5	6	Geo. Mean	30-Day Geo. Mean	Pseudomonas aeruginosa	Staphylococcus aureus
May 15/84	<100	<100	<100	<100	<100	<100	<100	<100	9	3	16	12	5	3	7	7	0	<1
May 31/84	100	200	<100	100	<100	600	<151	<123	65	45	97	93	90	12	55	19	0	<1
June 3/84	<100	<100	100	<100	200	<100	<112	<119	2	5	2	4	2	4	3	10	0	<1
June 8/84	<100	<100	<100	<100	<100	<100	<100	<114	2	3	<1	5	<1	8	<2	<7	0	<2
June 11/84	<100	<100	<100	<100	<100	<100	<100	<111	10	13	11	27	2	6	9	<7	0	<1
June 16/84	<100	<100	<100	<100	<100	<100	<100	<111	11	11	4	12	17	1	7	<8	0	<1
June 21/84	<100	100	<100	<100	<100	<100	<100	<109	28	42	43	>300	37	20	>47	><10	0	<1
June 24/84	<100	100	<100	<100	<100	<100	<100	<108	14	13	17	6	17	30	15	><11	0	<2
June 29/84	<100	100	<100	100	<100	<100	<100	<107	>300	208	223	205	21	6	>84	><14	0	<2
July 2/84	100	100	<100	<100	<100	100	<100	<105	52	70	67	21	9	31	34	><13	3	<1
July 7/84	<100	<100	<100	<100	<100	<100	<100	<104	110	62	66	108	92	16	64	><19	0	<1
July 12/84	<100	<100	<100	<100	<100	<100	<100	<104	15	15	35	12	25	4	15	>24	0	<1
July 15/84	300	<100	700	200	<100	<100	<187	<112	137	120	131	127	125	75	117	>33	0	<1
July 20/84	100	<100	<100	100	200	<100	<112	<114	185	104	>300	>300	>300	10	>132	>48	0	<1
July 23/84	<100	100	200	100	100	<100	<112	<116	72	106	88	89	88	36	76	>51	0	13
July 28/84	<100	<100	<100	<100	<100	<100	<100	<116	34	8	10	13	18	5	12	>50	0	<1
Aug. 2/84	<100	<100	<100	<100	<100	<100	<100	<116	19	6	162	52	125	16	35	>45	0	<1
Aug. 5/84	<100	<100	<100	<100	<100	<100	<100	<116	20	18	19	27	45	7	20	>42	0	4
Aug. 10/84	<100	<100	<100	<100	<100	<100	<100	<116	80	34	54	60	100	10	45	>40	0	2
Aug. 13/84	<100	<100	<100	100	<100	<100	<100	<116	23	21	8	7	19	32	16	>40	4	<1
Aug. 18/84	<100	<100	<100	<100	<100	<100	<100	<107	24	26	4	6	2	16	9	>32	0	8
Aug. 23/84	<100	<100	<100	100	<100	<100	<100	<105	68	106	66	74	88	>300	>99	>30	0	<1
Aug. 26/84	700	400	100	300	200	<100	<235	<116	87	82	81	67	61	62	73	>30	9	<1
Aug. 30/84	300	<100	<100	<100	200	<100	<135	<120	106	118	134	140	184	49	113	>40	0	<1
Sept. 3/84	<100	<100	<100	<100	<100	<100	<100	<120	8	6	16	10	20	8	10	>34	9	<1

Table 7b: Field observations recorded during the microbiological sample collections at Victoria Beach (ski dock area), Lake Winnipeg.

Date	Time (CDT)	Air Temp. (°C)	Water Temp. (°C)	Wind Direction	Cloud Cover (%)	Recent Precipitation	Visible Algae	Wave Action	Turbidity	Bather Load	Water Colour	Other
May 15/84	10:15	15	6	onshore	0	none	light	light	moderate	0	light	
May 31/84	12:00	22	16	onshore	75	none	light	light	slight	0	light	
June 3/84	9:30	17	16	onshore	0	none	none	light	moderate	0	light	
June 8/84	9:15	14	15	onshore	100	moderate	none	none	slight	0	clear	
June 11/84	11:40	17	16	onshore	0	none	light	moderate	extensive	0	light	
June 16/84	8:50	20	17	onshore	10	none	light	light	moderate	0	light	
June 21/84	11:40	21	21	onshore	90	none	moderate	light	moderate	0	light	
June 24/84	9:30	17	19	offshore	10	none	none	none	moderate	0	clear	
June 29/84	11:40	22	23	onshore	0	none	moderate	moderate	extensive	2	light	
July 2/84	9:00	20	21	onshore	20	light	light	heavy	extensive	2	light	
July 7/84	12:00	20	20	onshore	10	none	none	moderate	extensive	0	light	
July 12/84	9:10	19	23	offshore	70	none	moderate	none	moderate	0	light	
July 15/84	11:30	20	22	offshore	10	light	light	none	extensive	2	light	
July 20/84	9:20	17	22	onshore	30	none	light	light	moderate	0	light	
July 23/84	11:30	21	23	onshore	10	none	light	light	extensive	3	light	
July 28/84	9:30	20	24	onshore	20	none	light	light	moderate	4	light	
Aug. 2/84	11:50	24	24	offshore	0	none	moderate	none	slight	0	light	
Aug. 5/84	9:10	22	23	onshore	10	none	light	light	moderate	0	light	
Aug. 10/84	12:00	18	23	onshore	0	none	moderate	light	moderate	0	light	
Aug. 13/84	9:20	18	22	onshore	10	none	light	light	slight	0	light	
Aug. 18/84	14:30	24	24	onshore	0	none	light	none	slight	30	light	
Aug. 23/84	9:15	11	21	onshore	10	none	light	moderate	extensive	0	light	
Aug. 26/84	11:00	23	21	onshore	20	light	light	light	moderate	0	light	
Aug. 30/84	10:00	11	19	onshore	50	none	light	heavy	slight	0	light	
Sept. 3/84	-	-	-	-	-	-	-	-	-	-	-	

Table 8a: Fecal coliform, Escherichia coli and fecal streptococcus characteristics of Hillside Beach, Lake Winnipeg.

Date	Fecal Coliform 1	2	3	4	5	Geo. Mean	30-Day Geo. Mean	Escherichia coli 1	2	3	4	5	Geo. Mean	30-Day Geo. Mean	Fecal Streptococcus 1	2	3	4	5	Geo. Mean	30-Day Geo. Mean
May 15/84	<100	<100	<100	<100	<100	<100	<100								<1	<1	<1	<1	<1	<1	<1
May 31/84	<100	<100	<100	<100	<100	<100	<100								1	<1	2	2	<1	<1	<1
June 3/84	<100	<100	<100	<100	<100	<100	<100								<1	24	4	2	1	<3	<2
June 8/84	<100	<100	<100	100	<100	<100	<100								47	26	24	25	28	29	<3
June 11/84	<100	<100	<100	100	<100	<100	<100								12	4	9	8	18	9	<4
June 16/84	<100	<100	<100	<100	<100	<100	<100								2	2	1	2	5	2	<5
June 21/84	<100	<100	<100	<100	<100	<100	<100								63	89	48	86	49	65	<7
June 24/84	<100	100	<100	<100	<100	<100	<100								75	77	84	141	115	95	<10
June 29/84	<100	<100	<100	<100	<100	<100	<100								79	24	41	30	28	37	<12
July 2/84	100	<100	200	<100	<100	<115	<102								19	8	17	28	30	19	17
July 7/84	<100	<100	<100	<100	<100	<100	<102								17	17	39	41	37	28	22
July 12/84	<100	<100	100	100	<100	<100	<102								69	29	47	30	39	41	23
July 15/84	<100	<100	<100	100	100	<100	<102								54	61	47	70	51	56	29
July 20/84	<100	<100	<100	<100	<100	<100	<102								19	28	35	37	77	35	42
July 23/84	100	<100	<100	<100	<100	<100	<102								33	41	37	47	332	60	41
July 28/84	<100	<100	<100	<100	<100	<100	<102								9	2	7	6	15	6	30
Aug. 2/84	<100	<100	<100	<100	<100	<100	<102								19	8	14	5	15	11	25
Aug. 5/84	<100	<100	<100	<100	<100	<100	<100								80	7	7	10	14	14	25
Aug. 10/84	<100	<100	<100	<100	<100	<100	<100								14	6	6	4	8	7	21
Aug. 13/84	<100	<100	<100	<100	<100	<100	<100								>300	67	46	88	78	>91	>23
Aug. 18/84	<100	<100	<100	<100	<100	<100	<100								12	6	4	8	4	6	>18
Aug. 23/84	<100	<100	<100	<100	<100	<100	<100								2	6	8	4	26	6	>14
Aug. 26/84	<100	<100	<100	<100	<100	<100	<100								46	12	24	18	16	21	>16
Aug. 30/84	100	<100	<100	<100	<100	<100	<100								38	78	40	68	238	72	>20
Sept. 3/84	<100	<100	<100	<100	<100	<100	<100								99	90	34	38	58	58	>24
June 13/86	<10	<10	<10	<10	<10	<10	<10								10	10	<10	<10	<10	<10	<10
June 16/86	20	<10	<10	<10	<10	<11	<11	<10	<10	<10	<10	<10	<10		10	10	10	10	30	<14	<11
June 20/86	<10	10	<10	<10	20	<11	<11								30	<10	<10	10	10	<14	<12
June 27/86	<10	<10	10	30	<10	<14	<11								<10	<10	10	30	<10	<14	<12
June 29/86	<10	<10	20	20	20	<16	<12								<10	10	20	40	20	<17	<13
July 4/86	<10	10	<10	<10	<10	<10	<12	<10	10	10	10	20	<11		30	30	30	10	10	19	<14
July 13/86	30	70	220	220	160	111	<16								70	100	320	290	280	179	<20
July 20/86	30	40	60	30	30	37	<21								190	210	280	230	240	228	<36
July 26/86	<10	20	<10	<10	<10	<11	<21								40	60	120	10	20	36	<43
Aug. 4/86	<10	10	<10	<10	<10	<10	<22								10	10	30	10	30	16	54
Aug. 10/86	60	20	30	40	60	39	<28	360	450	290	320	320	344		230	80	160	200	210	165	82
Aug. 16/86	20	20	40	10	10	17	<20								720	920	490	450	320	542	103
Aug. 22/86	<10	10	10	<10	<10	<10	<15								20	50	70	10	10	23	65
June 5/87	<10	<10	<10	<10	<10	<10	<10								<10	<10	<10	<10	<10	<10	<10
June 8/87	30	<10	<10	<10	20	<14	<12								20	10	40	30	20	22	<15
June 12/87	<10	<10	<10	<10	<10	<10	<11								40	30	10	10	20	19	<16
June 20/87	130	10	50	30	10	29	<14								180	180	380	140	60	160	<28
June 27/87	<10	<10	<10	<10	<10	<10	<13								<10	30	20	30	10	18	<26
July 5/87	<10	<10	<10	<10	10	<10	<13								60	80	50	120	70	73	<31
July 10/87	10	<10	<10	<10	20	<11	<13								450	370	160	260	510	323	<66
July 16/87	<10	<10	<10	<10	<10	<10	<13								<10	<10	10	<10	20	<11	<60
July 18/87	80	80	40	60	20	50	<16								520	530	420	390	270	414	<83
Aug. 2/87	40	130	40	20	20	38	<19								40	70	110	110	60	73	<96
Aug. 9/87	20	10	<10	10	<10	<11	<19								280	210	290	290	190	248	<123
Aug. 17/87	<10	<10	10	<10	<10	<10	<22								110	70	60	80	140	88	18

Table 8b: Field observations recorded during the microbiological sample collections at Hillside Beach, Lake Winnipeg.

Date	Time (CDT)	Air Temp. (°C)	Water Temp. (°C)	Wind Direction	Cloud Cover (%)	Recent Precipitation	Visible Algae	Wave Action	Turbidity	Bather Load	Water Colour	Other
May 15/84	10:45	15	5	offshore	0	none	light	light	moderate	0	light	
May 31/84	11:30	23	13	offshore	65	none	light	none	slight	0	light	
June 3/84	10:00	19	14	onshore	0	none	none	light	moderate	0	light	
June 8/84	10:00	14	14	onshore	100	moderate	none	moderate	slight	0	light	
June 11/84	11:00	17	15	onshore	0	none	none	moderate	slight	0	light	
June 16/84	9:30	20	18	onshore	10	none	none	light	slight	0	light	
June 21/84	11:10	20	21	offshore	90	none	light	none	slight	0	clear	
June 24/84	10:20	18	19	onshore	10	none	none	heavy	extensive	0	light	
June 29/84	10:50	21	21	offshore	0	none	light	light	moderate	0	light	
July 2/84	10:00	21	22	onshore	10	light	light	light	moderate	2	light	
July 7/84	11:20	20	20	onshore	20	none	none	light	moderate	0	light	
July 12/84	10:00	20	23	onshore	70	none	light	light	moderate	0	light	
July 15/84	11:00	20	22	onshore	10	light	light	heavy	extensive	2	light	
July 20/84	10:10	20	22	onshore	30	none	light	none	slight	0	light	
July 23/84	12:20	22	23	onshore	10	none	light	heavy	extensive	2	light	
July 28/84	10:50	22	23	onshore	20	none	light	moderate	moderate	6	light	
Aug. 2/84	11:10	25	23	offshore	0	none	light	none	slight	4	light	
Aug. 5/84	9:50	23	23	onshore	10	none	moderate	moderate	moderate	6	light	
Aug. 10/84	11:30	18	22	onshore	50	none	moderate	light	moderate	6	light	
Aug. 13/84	10:15	20	22	offshore	10	none	light	light	slight	1	light	
Aug. 18/84	13:50	24	21	onshore	0	none	light	none	slight	10	light	
Aug. 23/84	10:05	12	22	onshore	10	none	moderate	light	moderate	0	light	
Aug. 26/84	10:30	23	21	onshore	20	light	moderate	light	slight	2	light	
Aug. 30/84	11:00	12	19	onshore	60	none	light	heavy	extensive	0	light	
Sept. 3/84	-	-	-	-	-	-	-	-	-	-	-	
June 13/86	9:45	18	16	onshore	30	light	light	crests	extreme	0	light	
June 16/86	11:55	11	15	onshore	50	light	light	crests	extreme	0	light	
June 20/86	9:55	22	18	offshore	70	moderate	light	none	slight	0	light	
June 27/86	9:35	17	18	onshore	10	none	light	crests	light	0	light	
June 29/86	10:20	19	17	onshore	0	none	light	moderate	slight	0	light	
July 4/86	11:00	19	20	onshore	0	moderate	light	light	moderate	0	light	
July 13/86	8:25	16	16	offshore	100	heavy	light	light	slight	0	light	
July 20/86	10:20	19	21	onshore	20	none	light	light	slight	0	light	
July 26/86	8:40	17	22	onshore	100	moderate	moderate	moderate	moderate	0	light	
Aug. 4/86	11:00	21	21	onshore	30	none	light	light	slight	0	light	
Aug. 10/86	10:10	14	21	onshore	100	light	moderate	moderate	moderate	0	light	
Aug. 16/86	8:50	12	21	onshore	10	none	heavy	crests	extreme	0	light	
Aug. 22/86	11:35	16	21	onshore	100	moderate	moderate	crests	extreme	0	light	
June 5/87	9:35	12	15	onshore	30	light	moderate	light	slight	0	light	
June 8/87	10:25	18	17	onshore	20	none	light	moderate	slight	0	light	
June 12/87	8:55	23	17	onshore	0	light	light	light	slight	0	light	
June 20/8	11:45	21	20	onshore	10	none	light	moderate	extreme	0	light	
June 27/87	11:15	18	18	onshore	10	light	light	moderate	moderate	0	light	
July 5/87	9:50	16	20	onshore	30	light	light	moderate	moderate	0	light	
July 10/87	11:05	22	21	onshore	90	moderate	light	moderate	moderate	0	light	
July 16/87	9:45	16	19	onshore	70	light	light	moderate	moderate	0	light	
July 18/87	11:10	19	20	offshore	100	moderate	light	light	moderate	0	light	
Aug. 2/87	9:25	22	24	onshore	30	light	moderate	light	moderate	0	light	
Aug. 9/87	9:10	16	23	onshore	20	none	moderate	moderate	moderate	0	light	
Aug. 17/87	9:05	15	17	onshore	30	heavy	moderate	crests	extreme	0	light	

Table 9a: Fecal coliform, Escherichia coli and fecal streptococcus characteristics of Lester Beach, Lake Winnipeg.

Date	Fecal Coliform 1	2	3	4	5	Geo. Mean	30-Day Geo. Mean	Escherichia coli 1	2	3	4	5	Geo. Mean	30-Day Geo. Mean	Fecal Streptococcus 1	2	3	4	5	Geo. Mean	30-Day Geo. Mean
May 15/84	<100	<100	<100	<100	<100	<100	<100								<1	<1	<1	<1	<1	<1	<1
May 31/84	<100	<100	<100	<100	<100	<100	<100								<1	1	1	1	<1	<1	<1
June 3/84	100	<100	<100	<100	<100	<100	<100								6	5	28	3	5	7	<2
June 8/84	<100	100	100	<100	<100	<100	<100								32	21	33	15	9	20	<3
June 11/84	<100	<100	<100	<100	<100	<100	<100								7	14	9	8	8	9	<4
June 16/84	<100	<100	<100	<100	<100	<100	<100								2	7	11	4	2	4	<5
Aug. 18/84	<100	<100	<100	<100	<100	<100	<100								2	16	8	62	16	12	12
Aug. 30/84	<100	<100	<100	<100	<100	<100	<100								190	234	192	192	218	204	50
Sept. 3/84	<100	<100	<100	<100	<100	<100	<100								38	66	30	29	24	35	44
May 28/85	<10	<10	<10	<10	<10	<10	<10	<10	<10	10	<10	<10	<10	<10	<1	<1	<1	<1	<1	<1	<1
May 30/85	<10	<10	<10	10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<1	21	13	11	12	<8	<6
June 2/85	10	<10	<10	<10	<10	<10	<10	<10	10	<10	10	20	<11	<10	77	20	18	11	17	22	<11
June 8/85	10	10	<10	<10	<10	<10	<10	<10	<10	10	<10	<10	<10	<10	7	2	123	4	1	6	<6
June 15/85	10	<10	10	30	150	<21	<12	<10	<10	10	40	60	<19	<12	50	45	74	28	113	56	<9
June 24/85	<10	<10	<10	<10	<10	<10	<11	<10	<10	<10	<10	<10	<10	<12	13	18	12	8	11	12	<9
June 30/85	<10	<10	<10	<10	<10	<10	<11	<10	10	<10	<10	<10	<10	<12	4	13	5	10	7	7	13
July 8/85	20	10	20	40	30	22	<14	30	40	30	20	20	27	<14	28	40	35	26	32	32	<15
July 14/85	10	10	20	<10	20	<13	<14	10	<10	10	10	10	<10	<14	56	59	51	57	69	58	<24
July 21/85	60	180	100	110	30	81	<21	50	190	70	20	<10	<27	<15	246	208	263	291	152	226	<32
Aug. 3/85	20	<10	<10	<10	160	<20	<26	90	30	<10	20	180	<40	<25	55	67	48	52	250	75	<75
Aug. 11/85	30	<10	<10	20	<10	<14	<24	10	<10	20	10	10	<11	<21	54	25	13	15	20	22	<68
Aug. 23/85	<10	20	10	<10	<10	<11	<15	<10	<10	20	<10	20	<13	<18	16	23	13	19	59	22	33
June 13/86	20	<10	<10	<10	<10	<12	<12								<10	<10	<10	10	30	<14	<14
June 16/86	<10	<10	<10	<10	<10	<10	<11	10	NR	<10	<10	<10	<10		20	10	30	20	40	22	<16
June 20/86	<10	10	<10	20	<10	<11	<11								10	<10	20	<10	10	<11	<15
June 27/86	<10	<10	<10	<10	20	<11	<11								30	40	30	30	40	34	<18
June 29/86	<10	<10	10	<10	<10	<10	<11								30	50	10	20	40	26	<19
July 4/86	<10	<10	<10	<10	<10	<10	<11	<10	30	30	30	10	<19		20	30	<10	50	40	<26	<20
July 13/86	<10	<10	<10	<10	10	<10	<11								20	<10	<10	10	20	<14	<19
July 20/86	80	40	40	90	300	81	<15								330	370	230	230	400	304	<32
July 26/86	<10	30	<10	20	<10	<14	<29								140	690	20	170	70	118	<47
Aug. 4/86	<10	10	10	20	30	<14	<18								50	20	30	20	10	23	<49
Aug. 10/86	<10	30	20	10	10	<14	<20	40	50	60	10	30	33		100	130	80	90	130	104	<64
Aug. 16/86	10	20	40	10	40	20	<23								1120	780	1200	680	640	855	<149
Aug. 22/86	<10	<10	<10	<10	<10	<10	<15								70	70	30	80	60	59	107
June 5/87	20	<10	<10	10	<10	<11	<11								<10	<10	<10	<10	<10	<10	<10
June 8/87	<10	<10	10	30	<10	<12	<12								20	10	40	20	30	22	<15
June 12/87	20	10	40	60	30	27	<16								40	10	40	40	150	39	<20
June 20/87	<10	<10	<10	10	50	<14	<15								<10	<10	20	<10	120	<19	<20
June 27/87	<10	<10	<10	<10	<10	<10	<14								<10	<10	20	10	10	<11	<18
July 5/87	10	<10	<10	<10	<10	<10	<13								20	20	80	60	70	42	<21
July 10/87	<10	<10	<10	<10	<10	<10	<13								570	310	300	420	250	354	<42
July 16/87	10	10	10	<10	30	12	<11								30	10	<10	10	130	<21	<37
July 18/87	40	40	20	10	10	20	<12								210	160	160	120	90	142	<46
Aug. 2/87	60	10	80	70	120	53	<17								20	<10	80	70	180	<46	<72
Aug. 9/87	20	20	40	40	60	33	<21								260	330	240	280	160	247	<103
Aug. 17/87	<10	10	<10	10	<10	<10	<24								50	110	90	40	130	76	<105

Table 9b: Field observations recorded during the microbiological sample collections at Lester Beach, Lake Winnipeg.

Date	Time (CDT)	Air Temp. (°C)	Water Temp. (°C)	Wind Direction	Cloud Cover (%)	Recent Precipitation	Visible Algae	Wave Action	Turbidity	Bather Load	Water Colour	Other
May 15/84	14:00	20	8	offshore	0	none	light	light	moderate	0	light	
May 31/84	10:50	22	15	offshore	45	none	light	none	slight	0	light	
June 3/84	11:00	21	16	onshore	0	none	none	light	moderate	3	light	
June 8/84	10:50	15	16	onshore	100	moderate	none	moderate	slight	0	light	
June 11/84	10:30	16	14	onshore	0	none	none	moderate	moderate	0	light	
June 16/84	10:10	20	18	onshore	10	none	none	light	slight	4	clear	
Aug. 18/84	1:00	24	24	onshore	0	none	light	light	slight	50	light	
Aug. 30/84	11:35	14	19	onshore	50	none	light	heavy	slight	0	light	
Sept. 3/84	-	-	-	-	-	-	-	-	-	-	-	
May 28/85	11:50	17	15	onshore	30	none	none	light	slight	0	light	
May 30/85	9:10	16	13	onshore	50	none	none	light	slight	0	clear	
June 2/85	9:15	8	10	onshore	30	moderate	none	crests	moderate	0	light	
June 8/85	10:50	22	16	onshore	30	light	none	light	slight	2	clear	
June 15/85	10:00	14	16	onshore	100	heavy	none	light	moderate	0	light	raining
June 24/85	11:05	20	17	offshore	10	none	light	none	moderate	0	light	
June 30/85	8:30	14	15	offshore	50	light	none	none	moderate	0	light	
July 8/85	10:00	23	23	onshore	10	none	light	crests	extreme	2	light	
July 14/85	8:40	16	18	onshore	100	moderate	light	crests	moderate	0	light	raining
July 21/85	11:20	17	19	onshore	30	none	light	crests	moderate	0	light	
Aug. 3/85	9:50	18	20	onshore	100	moderate	light	light	moderate	0	light	
Aug. 11/85	9:10	12	18	offshore	100	none	moderate	light	moderate	0	light	
Aug. 23/85	9:05	16	17	onshore	100	heavy	light	light	slight	0	light	raining
June 13/86	10:20	19	17	onshore	30	light	ligth	crests	extreme	0	light	
June 16/86	11:25	11	15	onshore	50	light	light	crests	extreme	0	light	
June 20/86	10:20	22	18	offshore	70	moderate	light	none	slight	0	light	
June 27/86	10:05	17	18	onshore	10	none	light	crests	slight	0	light	
June 29/86	9:55	18	18	onshore	0	none	light	moderate	moderate	2	light	
July 4/86	10:30	18	21	onshore	0	moderate	light	light	slight	50	light	
July 13/86	8:55	16	16	offshore	100	heavy	light	light	slight	0	light	
July 20/86	9:50	17	21	onshore	20	none	light	light	slight	0	light	
July 26/86	9:05	18	22	onshore	100	moderate	moderate	moderate	moderate	0	light	
Aug. 4/86	10:30	21	21	onshore	20	none	light	light	slight	6	light	
Aug. 10/86	9:40	13	21	onshore	100	light	moderate	moderate	moderate	0	light	
Aug. 16/86	9:15	14	20	onshore	10	none	moderate	crests	moderate	0	light	
Aug. 22/86	10:55	14	21	onshore	100	moderate	moderate	moderate	extreme	0	light	
June 5/87	10:15	14	15	onshore	20	light	light	light	slight	0	light	
June 8/87	9:50	16	17	onshore	20	none	light	moderate	moderate	0	light	
June 12/87	9:25	23	18	onshore	0	light	light	light	slight	0	light	
June 20/87	11:25	20	20	onshore	10	none	light	crests	moderate	2	light	
June 27/87	10:45	17	18	onshore	10	light	light	moderate	moderate	2	light	
July 5/87	10:20	18	20	onshore	50	light	light	moderate	moderate	0	light	
July 10/87	10:45	21	20	onshore	90	moderate	light	moderate	moderate	1	light	
July 16/87	9:50	17	20	onshore	70	light	moderate	moderate	moderate	6	light	
July 18/87	10:45	18	19	offshore	100	moderate	light	light	moderate	0	light	
Aug. 2/87	9:45	24	24	onshore	30	light	light	moderate	moderate	4	light	
Aug. 9/87	9:35	17	23	onshore	10	none	moderate	moderate	slight	0	light	
Aug. 17/87	9:25	15	18	onshore	30	heavy	moderate	crests	extreme	0	light	

Table 10a: Fecal coliform, Escherichia coli and fecal streptococcus characteristics of Grand Beach (East), Lake Winnipeg.

Date	Fecal Coliform 1	2	3	4	5	Geo. Mean	30-Day Geo. Mean	Escherichia coli 1	2	3	4	5	Geo. Mean	30-Day Geo. Mean	Fecal Streptococcus 1	2	3	4	5	Geo. Mean	30-Day Geo. Mean
May 15/84	<100	<100	<100	<100	<100	<100	<100								1	<1	<1	<1	<1	<1	<1
May 31/84	<100	<100	<100	<100	<100	<100	<100								4	2	2	1	2	2	<1
June 3/84	<100	<100	<100	<100	100	<100	<100								3	1	1	3	7	2	<2
June 8/84	<100	<100	<100	<100	<100	<100	<100								9	8	6	13	9	9	<3
June 11/84	<100	<100	<100	<100	<100	<100	<100								9	14	8	7	16	10	<3
June 16/84	<100	<100	<100	<100	<100	<100	<100								1	<1	<1	4	1	<1	<4
June 21/84	100	<100	<100	<100	100	<100	<100								18	20	8	>300	>300	>48	><5
June 24/84	<100	<100	<100	<100	<100	<100	<100								43	30	44	28	47	38	><7
June 29/84	100	<100	<100	<100	<100	<100	<100								8	8	5	1	8	5	><7
July 2/84	<100	<100	<100	<100	<100	<100	<100								17	10	7	5	10	9	><8
July 7/84	<100	<100	<100	<100	<100	<100	<100								8	6	1	3	8	4	><9
July 12/84	300	100	100	100	100	125	<103								146	91	100	113	69	101	><12
July 15/84	500	200	<100	<100	200	<182	<111								105	61	76	91	94	84	><16
July 20/84	<100	100	<100	<100	<100	<100	<111								23	39	16	19	23	23	>22
July 23/84	200	100	100	<100	<100	<115	<113								34	29	19	14	10	19	20
July 28/84	<100	<100	<100	<100	<100	<100	<113								9	8	10	6	11	9	17
Aug. 2/84	<100	100	<100	<100	<100	<100	<113								58	28	61	14	56	38	21
Aug. 5/84	<100	<100	<100	<100	<100	<100	<113								16	10	11	14	11	12	22
Aug. 10/84	100	<100	<100	<100	<100	<100	<113								168	114	90	22	30	65	31
Aug. 13/84	700	400	300	200	100	279	<125								130	140	63	62	44	79	31
Aug. 18/84	<100	<100	<100	<100	<100	<100	<116								6	6	2	14	26	8	23
Aug. 23/84	<100	<100	<100	<100	<100	<100	<116								44	16	20	18	28	23	23
Aug. 26/84	300	500	100	<100	500	<237	<127								84	43	42	40	34	46	25
Aug. 30/84	<100	100	<100	<100	<100	<100	<127								180	140	134	148	134	146	36
Sept. 3/84	<100	200	<100	100	100	<115	<129								8	12	12	28	4	11	31
May 28/85	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	10	<10	<10	<1	<1	<1	<1	<1	<1	<1
May 30/85	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<1	<1	7	2	3	<2	<2
June 2/85	10	<10	10	<10	30	<12	<11	<10	<10	<10	<10	10	<10	<10	21	6	5	20	7	10	<3
June 8/85	<10	10	<10	10	<10	<10	<11	<10	10	10	<10	<10	<10	<10	1	2	8	4	2	3	<3
June 15/85	160	170	70	60	80	98	<17	180	170	130	220	110	157	<17	134	117	125	101	67	106	<6
June 24/85	<10	20	<10	10	<10	<10	<16	<10	10	10	10	<10	<10	<16	20	25	37	22	16	23	<7
June 30/85	10	<10	<10	<10	<10	<10	<16	10	<10	<10	<10	<10	<10	<16	27	9	3	12	8	9	<10
July 8/85	<10	20	40	<10	30	<19	<18	20	40	10	10	20	17	<19	24	26	15	17	20	20	<16
July 14/85	40	20	<10	<10	<10	<15	<22	10	20	20	10	<10	<13	<20	16	15	9	15	20	15	<23
July 21/85	80	10	<10	20	50	<24	<16	140	10	30	50	50	40	<16	84	92	71	50	53	68	<21
Aug. 3/85	10	<10	10	10	390	<21	<19	40	<10	20	20	90	<27	<22	26	22	19	25	>300	>38	<29
Aug. 11/85	40	50	50	10	<10	<25	<21	20	30	30	20	30	<26	<25	69	64	56	58	50	59	<39
Aug. 23/85	20	10	<10	<10	20	<13	<19	10	20	30	20	<10	<16	<22	38	8	10	18	15	15	<33

Table 10a: continued.

Date	Fecal Coliform 1	2	3	4	5	Geo. Mean	30-Day Geo. Mean	Escherichia coli. 1	2	3	4	5	Geo. Mean	30-Day Geo. Mean	Fecal Streptococcus 1	2	3	4	5	Geo. Mean	30-Day Geo. Mean
June 13/86	<10	<10	<10	<10	<10	<10	<10														
June 16/86	<10	<10	10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10		10	160	<10	20	10	<42	<42
June 20/86	<10	<10	<10	<10	<10	<10	<10								<10	<10	30	<10	30	<16	<18
June 27/86	30	<10	20	30	<10	<20	<12								10	<10	<10	<10	20	<11	<15
June 29/86	20	30	20	30	20	24	<13								20	<10	10	50	20	<18	<16
July 4/86	<10	<10	<10	<10	<10	<10	<13	20	20	<10	<10	10	<14		30	50	30	60	50	42	<19
July 13/86	110	170	60	60	110	94	<17								20	10	30	50	30	25	<20
July 20/86	190	180	200	102	160	167	<30								270	140	180	70	190	155	<27
July 26/86	30	30	40	50	60	41	<37								420	410	340	310	350	364	<48
Aug. 4/86	<10	<10	<10	<10	<10	<10	<36								40	60	30	70	220	57	<63
Aug. 10/86	<10	<10	10	<10	<10	<10	<36	50	40	<10	50	70	<37		<10	<10	<10	<10	10	<10	<60
Aug. 16/86	50	20	10	10	20	18	<26								10	<10	10	<10	20	<11	<52
Aug. 22/86	30	40	30	40	40	36	<19								150	160	410	440	510	294	<59
															70	70	60	>300	100	>98	><45
June 5/87	<10	<10	10	<10	<10	<10	<10														
June 8/87	<10	<10	<10	<10	<10	<10	<10								<10	<10	<10	<10	<10	<10	<10
June 12/87	190	20	<10	20	10	<24	<13								<10	20	10	20	20	<15	<12
June 20/87	20	10	30	<10	80	<22	<15								50	70	20	10	80	35	<18
June 27/87	10	20	60	10	20	19	<16								<10	50	170	150	500	<91	<26
July 5/87	1180	620	1000	1270	470	847	<31								10	10	10	40	20	15	<24
July 10/87	<10	<10	<10	<10	<10	<10	<38								2230	1500	2510	2940	820	1825	<49
July 16/87	60	<10	10	<10	30	<18	<36								70	50	60	50	70	60	<88
July 18/87	80	50	60	80	60	65	<40								80	60	30	<10	30	<34	<87
Aug. 2/87	10	20	30	<10	10	<18	<43								230	180	210	180	130	183	<99
Aug. 9/87	<10	20	20	10	20	<15	<19								10	20	<10	<10	<10	<11	<95
Aug. 17/87	<10	<10	<10	<10	<10	<10	<19								10	80	110	90	90	59	<48
															100	120	50	50	50	69	<54

Table 10b: Field observations recorded during the microbiological sample collections at Grand Beach (East), Lake Winnipeg.

Date	Time (CDT)	Air Temp. (°C)	Water Temp. (°C)	Wind Direction	Cloud Cover (%)	Recent Precipitation	Visible Algae	Wave Action	Turbidity	Bather Load	Water Colour	Other
May 15/84	11:30	15	8	offshore	0	none	light	none	moderate	0	light	
May 31/84	10:00	21	16	offshore	50	none	light	none	slight	0	light	
June 3/84	11:35	22	18	onshore	0	none	none	light	moderate	10	light	
June 8/84	11:45	15	16	onshore	100	moderate	light	moderate	moderate	0	light	
June 11/84	9:00	15	15	onshore	0	none	none	moderate	moderate	0	light	
June 16/84	10:50	21	21	offshore	0	none	none	light	slight	17	clear	
June 21/84	9:30	18	17	offshore	90	none	moderate	none	slight	0	clear	
June 24/84	11:00	18	22	onshore	10	none	none	heavy	extensive	46	light	
June 29/84	9:30	19	20	offshore	0	none	none	none	moderate	3	light	
July 2/84	10:30	22	21	onshore	10	light	light	moderate	moderate	45	clear	
July 7/84	9:50	17	20	offshore	10	none	none	none	moderate	4	light	
July 12/84	11:00	20	23	onshore	50	none	light	light	moderate	12	light	
July 15/84	9:40	17	22	onshore	50	light	light	heavy	extensive	0	light	
July 20/84	10:50	21	21	onshore	30	none	light	light	moderate	20	light	
July 23/84	10:00	20	22	onshore	10	none	light	heavy	extensive	4	light	
July 28/84	11:30	23	22	onshore	20	none	light	light	moderate	400	light	
Aug. 2/84	10:10	23	23	offshore	0	none	none	none	slight	1	light	
Aug. 5/84	10:30	24	24	offshore	10	none	light	light	moderate	200	light	
Aug. 10/84	10:00	18	22	onshore	70	none	light	light	moderate	4	light	
Aug. 13/84	11:00	22	22	offshore	10	none	light	light	slight	30	light	
Aug. 18/84	12:05	25	22	onshore	0	none	light	light	moderate	125	light	
Aug. 23/84	11:00	16	20	offshore	10	none	light	light	moderate	4	light	
Aug. 26/84	9:25	22	21	offshore	20	light	light	light	moderate	0	light	
Aug. 30/84	12:25	14	19	onshore	70	none	light	heavy	moderate	0	light	
Sept. 3/84	-	-	-	-	-	-	-	-	-	-	-	
May 28/85	10:20	17	13	onshore	30	none	none	light	light	0	clear	
May 30/85	9:50	17	12	onshore	50	none	none	light	slight	0	clear	
June 2/85	9:50	10	11	onshore	10	light	none	crests	extreme	0	light	
June 8/85	9:30	22	16	offshore	50	light	none	light	slight	0	clear	raining
June 15/85	10:40	15	15	onshore	100	moderate	none	light	moderate	0	light	
June 24/85	9:40	20	16	offshore	10	none	light	light	moderate	0	light	
June 30/85	9:00	15	15	offshore	50	light	none	none	moderate	0	light	
July 8/85	8:50	22	22	onshore	10	none	light	moderate	extreme	0	light	
July 14/85	9:05	16	19	onshore	100	moderate	light	crests	moderate	0	light	raining
July 21/85	10:00	16	19	onshore	50	none	light	crests	moderate	0	light	
Aug. 3/85	8:30	17	21	offshore	100	light	light	light	moderate	0	light	
Aug. 11/85	9:50	12	17	offshore	100	none	light	light	slight	0	light	
Aug. 23/85	9:50	17	17	onshore	100	heavy	light	light	moderate	0	light	raining

Table 10b: continued.

Date	Time (CDT)	Air Temp. (°C)	Water Temp. (°C)	Wind Direction	Cloud Cover (%)	Recent Precipitation	Visible Algae	Wave Action	Turbidity	Bather Load	Water Colour	Other
June 13/86	10:50	19	17	onshore	30	light	light	crests	extreme	0	light	
June 16/86	10:10	10	16	onshore	50	light	light	crests	extreme	0	light	
June 20/86	10:50	23	18	offshore	70	moderate	light	light	slight	4	light	
June 27/86	10:45	17	19	onshore	10	none	light	crests	moderate	3	light	
June 29/86	8:45	16	18	onshore	0	none	light	light	moderate	4	light	
July 4/86	9:25	17	20	onshore	0	Moderate	light	light	slight	2	light	
July 13/86	9:20	16	17	offshore	100	heavy	light	light	slight	0	light	
July 20/86	8:45	17	21	onshore	30	none	light	light	moderate	0	light	
July 26/86	9:40	18	22	onshore	100	moderate	moderate	moderate	moderate	2	light	
Aug. 4/86	9:25	16	21	onshore	20	none	light	light	slight	1	light	
Aug. 10/86	8:40	12	21	onshore	100	light	light	moderate	slight	0	light	
Aug. 16/86	9:40	16	21	onshore	10	none	moderate	crests	moderate	4	light	
Aug. 22/86	9:50	13	20	onshore	100	moderate	light	moderate	extreme	0	light	
June 5/87	10:45	16	16	offshore	20	light	light	light	slight	0	light	
June 8/87	8:45	14	17	onshore	30	none	light	moderate	moderate	0	light	
June 12/87	10:05	24	19	onshore	0	light	light	light	slight	0	light	
June 20/87	10:15	16	21	onshore	10	none	light	moderate	moderate	2	light	
June 27/87	9:40	16	19	onshore	30	light	light	moderate	moderate	20	light	
July 5/87	10:50	18	20	onshore	50	light	light	moderate	moderate	2	light	
July 10/87	9:50	18	21	onshore	100	moderate	light	moderate	moderate	4	light	
July 16/87	10:20	18	19	offshore	50	light	light	moderate	moderate	100	light	
July 18/87	9:50	16	20	onshore	100	moderate	light	moderate	moderate	1	light	
Aug. 2/87	10:10	24	24	onshore	30	light	moderate	moderate	moderate	13	light	
Aug. 9/87	10:00	18	22	onshore	10	none	moderate	moderate	extreme	6	light	
Aug. 17/87	9:50	16	18	onshore	10	heavy	moderate	crests	extreme	2	light	

Table 11a: Fecal coliform, Escherichia coli and fecal streptococcus characteristics of Grand Beach (West), Lake Winnipeg.

Date	Fecal Coliform 1	2	3	4	5	Geo. Mean	30-Day Geo. Mean	Escherichia coli. 1	2	3	4	5	Geo. Mean	30-Day Geo. Mean	Fecal Streptococcus 1	2	3	4	5	Geo. Mean	30-Day Geo. Mean
May 15/84	<100	<100	<100	<100	<100	<100	<100														
May 31/84	<100	<100	<100	<100	<100	<100	<100								1	<1	<1	<1	<1	<1	<1
June 3/84	<100	<100	<100	100	<100	<100	<100								8	8	27	2	<1	5	<2
June 8/84	100	<100	<100	100	100	<100	<100								2	2	<1	3	14	3	<2
June 11/84	<100	<100	<100	<100	<100	<100	<100								19	9	2	1	10	5	<3
June 16/84	<100	<100	-	-	-	<100	<100								9	5	1	1	2	2	<3
June 21/84	<100	200	100	<100	<100	<115	<103								<1	2	-	-	-	<1	<3
June 24/84	<100	100	<100	<100	100	<100	<102								24	32	25	9	15	19	<5
June 29/84	400	400	<100	<100	<100	<174	<110								47	37	51	52	67	50	<7
July 2/84	<100	<100	<100	<100	<100	<100	<110								77	35	18	13	40	30	<8
July 7/84	<100	<100	<100	<100	<100	<100	<110								10	14	9	8	8	10	<9
July 12/84	<100	100	300	<100	100	<125	<113								5	6	2	10	8	5	<10
July 15/84	200	1600	600	<100	200	<328	<133								30	73	58	73	94	61	<14
July 20/84	<100	200	<100	100	<100	<115	<132								161	149	157	151	148	153	<21
July 23/84	<100	100	100	400	<100	<132	<135								38	56	18	37	49	37	23
July 28/84	<100	<100	<100	100	<100	<100	<135								30	41	113	60	66	56	23
Aug. 2/84	<100	100	<100	<100	<100	<100	<126								11	12	8	42	9	13	21
Aug. 5/84	<100	100	<100	100	<100	<100	<126								29	26	25	70	16	29	23
Aug. 10/84	500	100	<100	100	100	<138	<131								32	9	19	102	19	25	28
Aug. 13/84	<100	<100	1300	500	600	<330	<148								260	208	172	148	>300	>210	>33
Aug. 18/84	<100	<100	<100	<100	<100	<100	<127								5	81	121	100	91	54	>29
Aug. 23/84	<100	<100	100	100	<100	<100	<125								12	12	8	8	52	14	>26
Aug. 26/84	<100	200	<100	<100	100	<115	<123								2	20	32	68	14	16	>22
Aug. 30/848	100	100	<100	<100	100	<100	<123								24	25	7	28	11	17	>21
Sept. 3/84	<100	<100	<100	<100	<100	<100	<123								246	212	118	98	68	133	>27
															24	10	6	12	12	12	>25
May 28/85	10	<10	<10	<10	<10	<10	<10	<10	10	<10	<10	<10	<10	<10							
May 30/85	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<1	1	<1	<1	<1	<1	<1
June 2/85	<10	<10	<10	<10	<10	<10	<10	10	<10	10	10	<10	<10	<10	<1	<1	1	2	3	<1	<1
June 8/85	<10	10	<10	10	10	<10	<10	10	<10	<10	<10	<10	<10	<10	3	4	4	1	5	3	<2
June 15/85	400	150	120	80	220	166	<18	280	180	180	170	170	192	<18	1	<1	3	2	2	<2	<2
June 24/85	20	40	80	10	<10	<23	<18	40	50	60	40	10	34	<20	>300	63	79	100	128	<>114	<>4
June 30/85	<10	20	<10	20	<10	<13	<19	20	<10	<10	<10	<10	<10	<21	59	100	127	68	57	78	<>6
July 8/85	10	20	20	50	90	<28	<25	10	30	40	10	50	23	<28	9	6	<300	13	6	>17	<>10
July 14/85	30	20	10	<10	40	<19	<31	50	10	10	30	40	23	<33	15	41	42	45	38	34	<>24
July 21/85	1170	830	1460	2190	340	1011	<55	890	1050	2630	>3000	300	>1172	<>47	86	43	57	44	83	60	>50
Aug. 3/85	260	200	<10	10	20	<40	<68	80	220	<10	10	910	<69	<>80	>300	>300	>300	>300	>300	>300	>60
Aug. 11/85	120	50	110	70	140	92	<92	90	80	40	80	100	75	<>108	>300	243	21	22	157	>88	>86
Aug. 23/85	450	30	20	20	140	60	<60	380	20	30	50	250	78	<74	85	62	76	60	182	85	>108
															>300	125	41	26	83	>80	>84

Table 11a: continued.

Date	Fecal Coliform 1	2	3	4	5	Geo. Mean	30-Day Geo. Mean	Escherichia coli. 1	2	3	4	5	Geo. Mean	30-Day Geo. Mean	Fecal Streptococcus 1	2	3	4	5	Geo. Mean	30-Day Geo. Mean
June 13/86	10	<10	<10	<10	<10	<10	<10								<10	<10	<10	10	<10	<10	<10
June 16/86	<10	<10	10	<10	<10	<10	<10	50	<10	<10	<10	<10	<14		10	<10	<10	<10	10	<10	<10
June 20/86	<10	<10	<10	50	10	<14	<11								<10	<10	40	70	<10	<19	<12
June 27/86	10	10	10	10	50	<14	<12								90	30	40	20	40	39	<17
June 29/86	90	30	70	40	50	52	<16								110	90	130	40	60	79	<23
July 4/86	<10	<10	<10	<10	<10	<10	<15	20	20	<10	<10	10	<13		20	50	10	10	30	20	<22
July 13/86	320	260	310	150	340	265	<22								430	680	420	280	460	436	<34
July 20/86	10	10	30	10	80	19	<24								340	350	440	360	350	366	<73
July 26/86	20	30	20	40	10	22	<30								10	10	50	50	80	29	81
Aug. 8/86	10	<10	20	10	<10	<11	<26								30	<10	10	<10	20	<14	<67
Aug. 10/86	20	<10	<10	<10	<10	<11	<27	120	80	90	100	30	76		80	110	120	110	100	103	<93
Aug. 16/86	20	30	70	20	50	34	<18								820	920	810	920	990	889	107
Aug. 22/86	70	20	10	60	20	28	<19								90	60	100	80	60	76	78
June 5/87	<10	<10	<10	<10	<10	<10	<10														
June 8/87	<10	30	30	50	<10	21	<15								<10	<10	<10	<10	<10	<10	<10
June 12/87	290	190	230	80	30	125	<30								10	20	20	10	10	13	<11
June 20/87	<10	10	40	10	40	<17	<26								160	30	110	100	20	64	<20
June 27/87	10	<10	<10	<10	20	<11	<22								40	10	60	10	<10	<19	<20
July 5/87	210	570	400	370	250	338	<35								30	20	<10	10	190	<26	<21
July 10/87	<10	<10	<10	<10	<10	<10	<38								280	1250	940	390	370	544	<32
July 16/87	<10	10	20	10	10	<11	<21								20	170	120	270	760	153	<58
July 18/87	160	250	250	170	190	200	<30								30	10	40	130	90	43	<54
Aug. 2/87	20	<10	<10	<10	<10	<11	<34								300	350	480	420	350	375	<86
Aug. 9/87	40	20	20	<10	30	<22	<19								<10	<10	<10	10	10	<10	<96
Aug. 17/87	<10	30	20	30	10	<18	<26								30	70	80	110	100	72	<64
															40	60	210	210	170	112	<65

Table 11b: Field observations recorded during the microbiological sample collections at Grand Beach (West), Lake Winnipeg.

Date	Time (CDT)	Air Temp. (°C)	Water Temp. (°C)	Wind Direction	Cloud Cover (%)	Recent Precipitation	Visible Algae	Wave Action	Turbidity	Bather Load	Water Colour	Other
May 15/84	12:30	20	11	offshore	10	none	light	none	moderate	0	light	
May 31/84	9:20	20	13	-	30	none	light	none	slight	0	light	
June 3/84	12:10	22	19	onshore	0	none	none	light	moderate	20	light	
June 8/84	12:35	14	16	onshore	100	moderate	light	light	slight	0	light	
June 11/84	9:35	16	15	offshore	0	none	none	moderate	moderate	2	light	
June 16/84	11:20	21	20	offshore	0	none	none	light	slight	31	clear	
June 21/84	10:05	20	21	offshore	90	none	light	light	moderate	6	light	
June 24/84	11:40	18	21	onshore	10	none	none	heavy	extensive	32	light	
June 29/84	10:00	19	22	offshore	0	none	light	none	moderate	12	light	
July 2/84	11:00	22	22	onshore	10	light	light	moderate	slight	1500	light	
July 7/84	10:20	19	21	offshore	10	none	none	none	moderate	120	light	
July 12/84	11:30	22	23	onshore	40	none	light	light	moderate	900	light	
July 15/84	10:05	17	22	onshore	30	light	light	heavy	extensive	30	light	
July 20/84	11:20	22	23	onshore	30	none	light	light	moderate	240	light	
July 23/84	10:30	20	22	onshore	10	none	light	heavy	extensive	60	light	
July 28/84	12:00	24	24	onshore	80	none	light	light	moderate	2000	light	
Aug. 2/84	10:35	24	23	offshore	0	none	none	none	slight	60	light	
Aug. 5/84	11:00	24	24	offshore	10	none	light	light	moderate	3000	light	
Aug. 10/84	10:30	19	23	onshore	50	none	moderate	light	moderate	60	light	
Aug. 13/84	11:30	22	22	offshore	10	none	light	light	slight	600	light	
Aug. 18/84	11:10	20	23	onshore	0	none	light	light	slight	200	light	
Aug. 23/84	11:35	17	20	offshore	10	none	light	light	moderate	60	light	
Aug. 26/84	9:50	23	21	offshore	20	light	light	light	moderate	50	light	
Aug. 30/84	12:55	14	19	onshore	70	none	light	heavy	moderate	0	light	
Sept. 3/84	-	-	-	-	-	-	-	-	-	-	-	
May 28/85	10:50	17	13	onshore	50	none	none	light	slight	0	clear	
May 30/85	10:20	18	13	offshore	50	none	none	none	slight	0	clear	
June 2/85	10:30	10	11	onshore	10	light	none	crests	moderate	0	light	
June 8/85	10:05	22	15	offshore	50	light	none	light	slight	0	clear	
June 15/85	11:20	15	16	onshore	100	moderate	none	light	moderate	1	light	raining
June 24/85	10:20	20	16	offshore	10	none	light	light	moderate	0	light	
June 30/85	9:45	15	15	offshore	50	light	none	none	moderate	0	light	
July 8/85	9:20	22	22	onshore	10	none	light	crests	extreme	0	light	
July 14/85	9:30	17	18	onshore	100	moderate	light	crests	moderate	0	light	raining
July 21/85	10:35	16	19	onshore	40	none	light	crests	moderate	3	light	
Aug. 3/85	9:05	17	20	offshore	100	light	light	light	moderate	0	light	
Aug. 11/85	10:25	12	17	offshore	100	none	light	light	moderate	40	light	
Aug. 23/85	10:25	17	17	onshore	100	heavy	light	light	slight	0	light	raining

Table 11b: continued.

Date	Time (CDT)	Air Temp. (°C)	Water Temp. (°C)	Wind Direction	Cloud Cover (%)	Recent Precipitation	Visible Algae	Wave Action	Turbidity	Bather Load	Water Colour	Other
June 13/86	11:20	19	17	onshore	30	light	light	crests	extreme	0	light	
June 16/86	10:45	11	16	onshore	50	light	light	crests	extreme	0	light	
June 20/86	11:25	24	18	offshore	70	moderate	light	light	slight	300	light	
June 27/86	11:15	18	19	onshore	10	none	light	crests	moderate	200	light	
June 29/86	9:15	17	18	onshore	0	none	light	moderate	slight	200	light	
July 4/86	9:55	17	20	onshore	0	moderate	light	light	slight	200	light	
July 13/86	9:45	16	17	offshore	100	heavy	light	light	slight	0	light	
July 20/86	9:15	17	21	onshore	30	none	light	moderate	moderate	0	light	
July 26/86	10:10	19	22	onshore	100	moderate	moderate	light	moderate	25	light	
Aug. 4/86	9:50	16	21	onshore	10	none	light	light	slight	3	light	
Aug. 10/86	9:05	13	21	onshore	100	light	light	moderate	moderate	10	light	
Aug. 16/86	10:10	16	21	onshore	10	none	moderate	moderate	moderate	10	light	
Aug. 22/86	10:25	13	20	onshore	100	moderate	moderate	moderate	extreme	0	light	
June 5/87	11:10	16	16	offshore	20	light	light	light	slight	2	light	
June 8/87	9:15	15	16	onshore	30	none	light	moderate	moderate	0	light	
June 12/87	10:35	25	19	onshore	0	light	light	light	slight	20	light	
June 20/87	10:40	18	20	onshore	10	none	light	light	moderate	2	light	
June 27/87	10:10	17	19	onshore	20	light	light	moderate	moderate	200	light	
July 5/87	11:15	19	21	onshore	30	light	light	moderate	moderate	400	light	
July 10/87	10:20	20	21	onshore	90	moderate	light	moderate	moderate	80	light	
July 16/87	10:45	18	19	offshore	50	light	light	moderate	moderate	1500	light	
July 18/87	10:20	18	21	onshore	100	moderate	light	moderate	moderate	4	light	
Aug. 2/87	10:35	24	23	onshore	30	light	moderate	moderate	moderate	60	light	
Aug. 9/87	10:25	20	23	onshore	10	none	moderate	moderate	moderate	70	light	
Aug. 17/87	10:20	18	18	onshore	10	heavy	moderate	crests	extreme	4	light	

Table 12a: Fecal coliform, Escherichia coli and fecal streptococcus characteristics of Patricia Beach, Lake Winnipeg.

Date	Fecal Coliform 1	2	3	4	5	Geo. Mean	30-Day Geo. Mean	Escherichia coli. 1	2	3	4	5	Geo. Mean	30-Day Geo. Mean	Fecal Streptococcus 1	2	3	4	5	Geo. Mean	30-Day Geo. Mean
May 15/84	<100	<100	<100	<100	<100	<100	<100								<1	<1	<1	<1	<1	<1	<1
May 31/84	<100	<100	<100	100	<100	<100	<100								1	12	<1	3	1	<2	<1
June 3/84	<100	<100	<100	100	<100	<100	<100								>300	139	41	>300	>300	>173	><7
June 8/84	<100	<100	<100	100	<100	<100	<100								5	3	8	8	20	7	><7
June 11/84	100	<100	<100	<100	100	<100	<100								6	5	10	15	50	12	><8
June 16/84	-	-	-	-	-	-	-								-	-	-	-	-	-	-
June 21/84	<100	<100	<100	<100	<100	<100	<100								30	36	45	52	22	36	><16
June 24/84	<100	<100	<100	100	100	<100	<100								60	63	88	48	50	60	><20
June 29/84	2100	500	1600	200	900	787	<134								118	52	94	47	70	72	><24
July 2/84	100	500	300	<100	100	<172	<145								109	83	116	28	30	62	>39
July 7/84	<100	<100	<100	<100	<100	<100	<145								3	8	8	10	8	7	25
July 12/84	<100	<100	<100	<100	<100	<100	<145								1	6	1	2	6	2	21
July 15/84	<100	300	200	400	200	<217	<162								63	75	66	61	70	67	27
July 20/84	<100	<100	<100	<100	<100	<100	<153								30	9	12	17	6	13	25
July 23/84	200	300	300	<100	400	<236	<170								50	57	59	50	44	52	26
July 28/84	<100	100	<100	<100	<100	<100	<170								8	16	4	9	18	10	20
Aug. 2/84	<100	100	<100	<100	<100	<100	<131								14	16	17	15	11	14	17
Aug. 5/84	<100	200	<100	<100	200	<132	<127								8	10	3	9	18	8	13
Aug. 10/84	300	100	200	100	100	143	<133								>300	>300	206	230	206	>245	>20
Aug. 13/84	<100	100	300	<100	600	<179	<143								19	76	94	42	93	56	>30
Aug. 18/84	100	<100	100	<100	<100	<100	<130								32	8	36	36	46	27	>27
Aug. 23/84	200	100	<100	<100	<100	<115	<132								26	24	30	20	18	23	>29
Aug. 26/84	300	100	100	100	<100	<125	<122								17	27	20	18	21	20	>26
Aug. 30/84	<100	<100	100	100	100	<100	<122								156	132	148	136	128	140	>36
Sept. 3/84	<100	300	100	100	<100	<125	<125								18	40	14	34	30	25	>39
May 28/85	<10	<10	10	<10	<10	<10	<10	<10	<10	<10	<10	10	<10	<10	<1	<1	<1	<1	<1	<1	<1
May 30/85	10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	3	<1	39	<1	6	<4	<2
June 2/85	20	50	50	30	40	36	<15	20	10	20	40	60	25	<14	14	MR	7	9	40	14	<3
June 8/85	<10	10	<10	<10	30	<12	<15	<10	10	10	<10	<10	<10	<13	1	7	2	4	4	3	<3
June 15/85	40	<10	<10	<10	<10	<13	<14	<10	<10	<10	<10	<10	<10	<12	8	12	2	5	3	5	<4
June 24/85	40	110	60	110	50	68	<19	70	40	40	60	40	48	<15	55	48	36	53	62	50	<6
June 30/85	<10	20	10	<10	30	<14	<20	10	<10	<10	20	<10	<11	<15	5	4	8	6	7	6	<8
July 8/85	50	<10	10	140	70	<27	<21	70	60	240	230	70	110	<23	75	63	115	111	82	87	13
July 14/85	30	40	50	60	20	37	<26	20	30	30	80	60	39	<30	<300	22	22	36	26	>42	>22
July 21/85	200	150	120	160	130	150	<45	190	110	70	140	70	107	<48	>300	>300	>300	>300	>300	>300	>50
Aug. 3/85	100	30	40	<3000	310	162	<>75	90	40	20	1240	1150	159	92	207	55	61	>300	165	>128	>123
Aug. 11/85	270	130	110	30	30	81	<>93	210	130	90	60	70	101	90	99	72	66	84	73	78	>120
Aug. 23/85	550	790	520	470	520	560	>194	650	640	580	580	770	640	217	>300	>300	>300	>300	>300	>300	>144

Table 12a: continued.

Date	Fecal Coliform 1	2	3	4	5	Geo. Mean	30-Day Geo. Mean	Escherichia coli. 1	2	3	4	5	Geo. Mean	30-Day Geo. Mean	Fecal Streptococcus 1	2	3	4	5	Geo. Mean	30-Day Geo. Mean
June 13/86	10	10	10	30	50	22	22														
June 16/86	<10	<10	10	<10	<10	<10	<13	<10	<10	<10	<10	<10	<10		10	20	<10	30	10	<16	<16
June 20/86	30	<10	<10	<10	<10	<12	<13								<10	<10	30	<10	30	<16	<15
June 27/86	10	60	40	50	40	34	<16								10	10	30	10	<10	<12	<14
June 29/86	90	30	70	40	50	52	<21								50	40	40	20	50	38	<18
July 4/86	10	<10	10	20	<10	<11	<18	50	10	20	40	70	31		110	90	130	40	60	79	<24
July 13/86	10	<10	<10	<10	<10	<10	<17								40	10	10	40	180	31	<25
July 20/86	20	80	20	100	60	45	<19								20	50	20	<10	230	<34	<26
July 26/86	1730	1490	1240	470	120	710	<43								320	330	360	310	360	335	<41
Aug. 4/86	30	10	10	<10	<10	<12	<34								60	120	200	60	60	88	<67
Aug. 10/86	<10	30	30	20	20	<21	<38	40	20	50	20	30	30		60	20	<10	<10	<10	<16	<55
Aug. 16/86	180	200	430	330	340	281	<75								130	170	180	100	120	137	<74
Aug. 22/86	<10	<10	10	20	<10	<11	<57								700	640	820	630	640	683	<135
															10	30	<10	40	40	<22	<78
June 5/87	<10	<10	10	20	<10	<11	<11														
June 8/87	10	40	30	20	30	24	<16								<10	<10	20	<10	20	<13	<13
June 12/87	100	10	210	240	50	76	<27								10	<10	10	<10	<10	<10	<11
June 20/87	<10	10	<10	<10	<10	<10	<21								160	30	110	100	20	64	<20
June 27/87	30	<10	<10	30	30	<19	<21								<10	10	<10	10	<10	<10	<17
July 5/87	40	90	110	60	20	54	<25								30	10	30	30	40	26	<18
July 10/87	<10	<10	<10	<10	<10	<10	<24								160	260	280	300	120	211	<28
July 16/87	<10	10	<10	<10	<10	<10	<16								90	50	<10	190	100	<61	<46
July 18/87	130	90	130	50	90	92	<21								10	30	10	<10	<10	<12	<33
Aug. 2/87	10	10	40	<10	<10	<13	<23								50	50	30	100	20	43	<35
Aug. 9/87	10	30	30	10	<10	<16	<18								<10	<10	20	10	10	<11	<38
Aug. 17/87	20	10	20	40	20	20	<25								30	<10	20	10	70	<21	<24
															120	110	90	120	70	100	<32

Table 12b: Field observations recorded during the microbiological sample collections at Patricia Beach, Lake Winnipeg.

Date	Time (CDT)	Air Temp. (°C)	Water Temp. (°C)	Wind Direction	Cloud Cover (%)	Recent Precipitation	Visible Algae	Wave Action	Turbidity	Bather Load	Water Colour	Other
May 15/84	15:00	20	10	offshore	0	none	light	light	slight	0	light	
May 31/84	8:30	21	16	offshore	30	none	light	none	moderate	0	light	
June 3/84	13:15	24	20	onshore	0	none	none	light	moderate	4	light	
June 8/84	13:40	14	18	onshore	100	moderate	light	light	slight	0	light	
June 11/84	8:30	15	13	onshore	0	none	none	light	moderate	0	light	
June 16/84	-	-	-	-	-	-	-	-	-	-	-	
June 21/84	8:40	18	19	-	90	none	none	none	extensive	0	light	
June 24/84	12:30	19	21	onshore	10	none	light	heavy	extensive	24	light	
June 29/84	8:50	18	20	onshore	0	none	none	none	extensive	0	light	
July 2/84	12:14	23	23	onshore	10	light	light	moderate	extensive	90	light	
July 7/84	9:10	16	19	onshore	20	none	none	none	extensive	3	light	
July 12/84	12:20	23	25	onshore	50	none	light	light	moderate	300	light	
July 15/84	9:00	17	21	onshore	50	light	light	heavy	extensive	0	light	
July 20/84	12:15	23	24	onshore	10	none	light	none	extensive	12	light	
July 23/84	9:20	18	21	onshore	10	none	light	heavy	extensive	0	light	
July 28/84	12:50	24	25	onshore	80	none	light	none	extensive	800	light	
Aug. 2/84	9:30	23	24	offshore	0	none	none	none	moderate	0	light	
Aug. 5/84	11:50	25	25	onshore	10	none	light	light	extensive	800	light	
Aug. 10/84	9:10	17	21	onshore	80	light	light	light	extensive	0	light	
Aug. 13/84	12:20	23	23	offshore	10	none	light	light	slight	300	light	
Aug. 18/84	9:45	15	23	onshore	0	none	moderate	light	slight	3	light	
Aug. 23/84	12:20	18	20	onshore	10	none	light	moderate	extensive	12	light	
Aug. 26/84	8:40	22	21	onshore	20	light	light	light	moderate	0	light	
Aug. 30/84	14:00	15	19	onshore	50	none	light	heavy	extensive	0	light	
Sept. 3/84	-	-	-	-	-	-	-	-	-	-	-	
May 28/85	8:30	12	14	offshore	20	none	none	light	extreme	0	light	
May 30/85	12:00	20	17	onshore	90	none	none	light	moderate	0	clear	
June 2/85	12:15	11	13	onshore	50	light	none	crests	extreme	0	light	
June 8/85	8:00	20	17	offshore	100	moderate	none	none	moderate	0	light	raining
June 15/85	12:45	16	16	onshore	100	moderate	none	moderate	extreme	0	light	raining
June 24/85	8:05	14	14	onshore	10	none	light	none	extreme	0	light	
June 30/85	11:15	17	15	onshore	30	light	none	light	moderate	0	light	
July 8/85	8:00	21	22	onshore	10	none	light	moderate	extreme	0	light	
July 14/85	10:50	21	18	onshore	70	moderate	none	crests	extreme	0	light	raining
July 21/85	8:30	14	19	onshore	60	none	light	crests	extreme	0	light	
Aug. 3/85	7:40	16	19	onshore	100	light	light	light	moderate	0	light	
Aug. 11/85	12:00	15	18	offshore	100	none	moderate	light	moderate	0	light	
Aug. 23/85	11:55	17	16	onshore	100	heavy	none	light	slight	0	light	raining

Table 12b: continued.

Date	Time (CDT)	Air Temp. (°C)	Water Temp. (°C)	Wind Direction	Cloud Cover (%)	Recent Precipitation	Visible Algae	Wave Action	Turbidity	Bather Load	Water Colour	Other
June 13/86	11:55	20	16	onshore	30	light	light	crests	extreme	0	light	
June 16/86	9:30	10	15	onshore	100	light	light	crests	extreme	0	light	
June 20/86	12:10	24	18	offshore	80	moderate	light	light	slight	10	light	
June 27/86	11:50	20	18	onshore	10	none	light	crests	extreme	10	light	
June 29/86	8:10	16	18	onshore	0	none	light	light	extreme	4	light	
July 4/86	8:45	16	20	onshore	0	moderate	light	light	moderate	2	light	
July 13/86	10:20	17	17	offshore	100	heavy	light	light	slight	0	light	
July 20/86	8:10	16	21	onshore	30	none	light	moderate	extreme	0	light	
July 26/86	10:50	20	23	onshore	80	moderate	moderate	light	extreme	4	light	
Aug. 4/86	8:40	16	21	onshore	10	moderate	moderate	light	extreme	0	light	
Aug. 10/86	8:10	12	20	onshore	100	light	light	moderate	extreme	0	light	
Aug. 16/86	10:50	18	22	onshore	30	none	light	crests	extreme	0	light	
Aug. 22/86	9:05	11	20	onshore	100	moderate	light	moderate	extreme	0	light	
June 5/87	11:50	20	16	onshore	20	light	light	light	moderate	0	light	
June 8/87	8:05	12	16	onshore	30	none	light	moderate	extreme	0	light	
June 12/87	11:10	25	20	onshore	0	light	light	light	slight	3	light	
June 20/87	9:40	16	21	onshore	20	none	light	moderate	extreme	0	light	
June 27/87	9:10	16	19	onshore	30	light	light	crests	extreme	20	light	
July 5/87	11:50	20	20	onshore	30	light	light	moderate	moderate	12	light	
July 10/87	9:20	17	21	onshore	100	moderate	light	moderate	extreme	10	light	
July 16/87	11:15	20	20	onshore	30	light	light	moderate	moderate	500	light	
July 18/87	9:20	16	19	offshore	100	moderate	light	light	extreme	2	light	
Aug. 2/87	11:05	25	23	onshore	30	light	light	moderate	moderate	10	light	
Aug. 9/87	10:55	22	23	onshore	10	none	moderate	moderate	moderate	6	light	
Aug. 17/87	10:55	20	17	onshore	10	heavy	moderate	crests	extreme	8	light	

Table 13a: Fecal coliform, Escherichia coli and fecal streptococcus characteristics of Falcon Lake beach (Main), Falcon Lake.

Date	Fecal Coliform 1	2	3	4	5	Geo. Mean	30-Day Geo. Mean	Escherichia coli. 1	2	3	4	5	Geo. Mean	30-Day Geo. Mean	Fecal Streptococcus 1	2	3	4	5	Geo. Mean	30-Day Geo. Mean
May 17/84	<100	<100	<100	<100	<100	<100	<100								1	<1	<1	<1	1	<1	<1
June 2/84	1	1	<1	<1	<1	<1	<10								<1	5	1	1	1	<1	<1
June 7/84	2	10	9	8	6	6	<8								14	24	21	14	25	19	<3
June 10/84	6	7	15	35	12	12	<9								17	11	15	15	17	15	<4
June 15/84	3	21	20	25	15	14	<10								4	11	13	17	22	12	5
June 18/84	2	2	<1	3	3	<2	<8								<1	1	1	11	8	2	<5
June 23/84	<1	<1	<1	<1	<1	<1	<4								<1	<1	8	1	<1	<2	<5
June 28/84	2	1	<1	4	42	<3	<4								32	23	20	27	32	26	<6
July 1/84	<1	1	<1	<1	1	<1	<3								1	4	10	2	2	3	<6
July 6/84	<1	<1	<1	<1	<1	<1	<3								<1	1	1	<1	1	<1	<6
July 9/84	1	<1	<1	5	<1	<1	<2								3	1	7	17	3	4	<5
July 14/84	<1	8	3	<1	9	<3	<2								35	34	43	52	27	37	<5
July 19/84	27	2	<1	<1	1	<2	<2								9	2	57	2	1	5	<5
July 22/84	56	43	22	7	5	18	<2								80	20	23	19	49	32	<6
July 27/84	2	<1	<1	<1	<1	<1	<2								5	21	42	6	13	13	<8
July 30/84	<1	1	1	<1	2	<1	<2								6	11	6	9	5	7	<7
Aug. 4/84	5	<1	4	2	<1	<2	<2								10	6	7	7	8	7	<8
Aug. 9/84	2	2	3	3	5	3	<2								13	6	3	12	6	7	10
Aug. 12/84	2	12	4	38	8	8	<3								8	3	2	12	6	5	10
Aug. 17/84	<1	<1	<1	1	<1	<1	<3								57	61	16	25	90	42	11
Aug. 20/84	<1	2	4	3	2	<2	<3								12	2	5	2	1	3	10
Aug. 25/84	3	5	16	10	20	9	<2								<1	9	30	8	8	<7	<8
Aug. 29/84	1	4	<1	<1	3	<2	<3								8	3	11	3	3	5	<7
Sept. 2/84	<1	2	1	2	2	<2	<3								1	3	3	3	7	3	<7
May 29/85	<10	<10	<10			<10	<10	<10	<10	10			<10	<10	10	11	8			10	10
June 6/85	10	<10	<10			<10	<10	<10	<10	<10			<10	<10	12	4	4			6	7
June 10/85	<1	<1	<1			<1	<8	<1	<1	<1			<1	<8	1	1	2			1	4
June 17/85	1	<1	<1			<1	<3	1	<1	1			<1	<5	<1	<1	<1			<1	<3
June 28/85	<6	<68	<9			15	<2	15	85	18			28	<2	39	107	49			59	<10
July 6/85	5	<1	<1			<2	<2	2	<1	<1			<1	<2	42	21	8			19	<3
July 12/85	2	2	1			<2	<1	4	1	<1			<2	<1	70	89	51			68	<11
July 18/85	10	2	1			3	<3	5	1	5			3	<3	8	12	14			11	<15
July 29/85	<1	1	<1			<1	<3	<1	1	<1			<1	<3	2	1	1			1	15
Aug. 5/85	2	9	4			4	<2	1	4	1			2	<2	14	27	10			16	12
Aug. 19/85	1	2	<1			<1	<2	6	1	1			2	<2	5	4	6			4	6
Aug. 25/85	16	3	<1			<4	<2	13	4	3			5	<2	19	21	8			15	6
June 14/86	<1	<1	<1			<1	<1	3	4	4			4		2	4	3			3	3
June 22/86	<1	<1	<1			<1	<1								1	1	2			1	2
July 6/86	3	2	<1			<2	<1	1	2	<1			<1		4	2	32			6	3
July 18/86	<1	4	1			<2	<1								18	65	12			24	6
July 31/86	<1	2	3			<2	<2								6	3	4			4	9
Aug. 2/86	3	<1	1			<1	<2								19	3	6			7	8
Aug. 9/86	2	<1	1			<1	<2	7	1	<1			<2		19	19	34			23	11
Aug. 24/86	4	18	16			10	<3								<1	3	2			<2	<6
June 6/87	29	12	29			22	22								<10	20	40			<20	<20
June 14/87	4	3	5			4	9								5	<1	11			<4	<19
June 26/87	3	2	5			3	6								<1	<1	<1			<1	<7
July 11/87	1	1	7			2	3								<1	<1	<1			<1	<3
July 19/87	76	49	46			56	7								3	5	8			5	<3
July 31/87	66	50	54			56	18								23	7	95			25	<8

Table 13b: Field observations recorded during the microbiological sample collections at Falcon Lake beach (Main), Falcon Lake.

Date	Time (CDT)	Air Temp. (°C)	Water Temp. (°C)	Wind Direction	Cloud Cover (%)	Recent Precipitation	Visible Algae	Wave Action	Turbidity	Bather Load	Water Colour	Other
May 17/84	9:00	22	10	offshore	40	light	none	none	clear	0	clear	
June 2/84	12:00	20	12	offshore	20	none	none	none	clear	2	clear	
June 7/84	10:40	17	14	onshore	45	heavy	none	none	clear	0	clear	
June 10/84	13:15	8	14	onshore	25	light	none	none	clear	0	clear	
June 15/84	8:40	16	16	offshore	90	light	none	light	clear	0	light	
June 18/84	11:50	18	16	offshore	90	none	none	none	clear	0	clear	
June 23/84	8:20	16	16	offshore	70	moderate	none	none	clear	0	clear	
June 28/84	11:50	22	21	offshore	0	none	none	none	clear	30	clear	
July 1/84	8:30	16	19	offshore	100	light	none	none	clear	0	clear	
July 6/84	11:40	20	20	offshore	70	none	none	none	clear	4	clear	
July 9/84	8:30	17	20	offshore	10	none	none	none	clear	0	clear	
July 14/84	-	-	-	-	-	-	-	-	-	-	-	
July 19/84	8:30	16	19	offshore	0	none	none	none	clear	0	clear	
July 22/84	11:00	24	23	offshore	60	none	none	none	clear	220	clear	
July 27/84	8:30	20	23	offshore	0	none	none	none	clear	0	clear	
July 30/84	11:40	23	24	offshore	100	light	none	none	clear	6	light	
Aug. 4/84	8:30	22	24	offshore	10	none	none	none	clear	0	clear	
Aug. 9/84	11:35	22	22	offshore	90	light	none	light	clear	14	light	
Aug. 12/84	8:10	17	22	offshore	10	none	none	light	clear	0	clear	
Aug. 17/84	11:55	22	22	onshore	10	none	light	light	clear	40	light	
Aug. 20/84	10:20	19	-	offshore	100	heavy	none	none	clear	0	clear	raining
Aug. 25/84	11:10	22	22	offshore	0	none	light	none	clear	30	light	
Aug. 29/84	9:50	15	19	offshore	100	none	none	none	clear	0	clear	
Sept. 2/84	-	-	-	-	-	-	-	-	-	-	-	
May 29/85	8:30	15	15	onshore	100	light	light	light	clear	0	light	
June 6/85	1:00	18	13	onshore	100	light	light	moderate	clear	0	light	
June 10/85	8:50	13	12	onshore	10	light	light	none	clear	0	clear	
June 17/85	12:50	15	16	offshore	80	light	light	light	slight	0	light	
June 28/85	9:00	13	14	onshore	100	moderate	light	light	slight	0	light	
July 6/85	11:40	23	21	onshore	10	light	light	light	slight	150	light	
July 12/85	8:50	17	19	offshore	0	none	light	none	clear	0	light	
July 18/85	12:50	23	23	onshore	10	none	light	light	slight	150	light	
July 29/85	8:40	16	18	offshore	0	none	light	none	clear	1	light	
Aug. 5/85	12:25	22	20	offshore	100	moderate	light	light	clear	0	light	
Aug. 19/85	8:30	10	15	offshore	70	moderate	light	light	clear	0	light	
Aug. 25/85	11:45	20	17	onshore	0	light	light	light	slight	30	light	
June 14/86	8:20	11	15	offshore	50	light	light	none	clear	0	light	
June 22/86	11:25	21	19	offshore	50	light	light	light	clear	0	light	
July 6/86	7:45	15	16	offshore	50	moderate	light	light	slight	0	moderate	
July 18/86	9:00	20	20	offshore	20	light	light	light	slight	0	light	
July 31/86	9:00	16	17	offshore	100	light	light	light	slight	0	light	
Aug. 2/86	8:10	16	17	offshore	30	light	light	light	clear	2	light	
Aug. 9/86	8:05	16	19	offshore	50	light	light	light	slight	2	light	
Aug. 24/86	7:50	12	18	offshore	50	light	light	light	clear	0	clear	
June 6/87	8:05	18	16	offshore	100	heavy	light	light	clear	0	clear	
June 14/87	8:05	20	17	offshore	0	none	none	none	clear	0	clear	
June 26/87	9:15	16	18	offshore	50	moderate	light	light	clear	0	clear	
July 11/87	9:35	15	21	offshore	100	moderate	light	light	clear	0	clear	
July 19/87	9:20	18	22	offshore	30	light	light	light	clear	0	clear	
July 31/87	9:10	22	23	offshore	100	heavy	light	light	slight	0	clear	

Table 14a: Fecal coliform, Escherichia coli and fecal streptococcus characteristics of Faloma Beach, Falcon Lake.

Date	Fecal Coliform 1	2	3	4	5	Geo. Mean	30-Day Geo. Mean	Escherichia coli. 1	2	3	4	5	Geo. Mean	30-Day Geo. Mean	Fecal Streptococcus 1	2	3	4	5	Geo. Mean	30-Day Geo. Mean
May 17/84	<100	<100	<100	<100	<100	<100	<100								1	9	7	2	11	4	4
June 2/84	<1	<1	<1	<1	<1	<1	<10								7	7	17	50	>300	>26	>11
June 7/84	-	-	-	-	-	-	-								-	-	-	-	-	-	-
June 10/84	11	32	6	7	8	10	<10								8	7	7	10	9	8	>10
June 15/84	1	1	1	2	<1	<1	<6								10	10	8	12	1	6	>9
June 18/84	5	3	6	2	10	4	<6								10	9	10	2	10	7	>8
June 23/84	16	17	22	24	30	21	<4								55	36	47	39	68	48	>14
June 28/84	2	<1	1	<1	<1	<1	<3								28	4	1	3	2	4	>11
July 1/84	9	5	2	12	2	5	<3								26	13	10	5	8	11	>11
July 6/84	<1	<1	<1	<1	1	<1	<3								3	<1	3	4	11	<3	<8
July 9/84	9	10	<1	7	8	6	<4								20	12	11	16	9	13	<9
July 14/84	4	<1	<1	3	6	2	<3								90	92	84	71	70	81	<11
July 19/84	3	<1	<1	<1	<1	<1	<3								62	3	<1	<1	<1	<3	<10
July 22/84	8	7	15	13	1	6	<3								23	37	33	31	21	28	<12
July 27/84	<1	<1	1	<1	<1	<1	<2								3	2	1	1	<1	<1	<8
July 30/84	7	5	5	7	3	5	<3								15	13	15	22	33	18	<10
Aug. 4/84	4	<1	<1	3	3	<2	<2								10	5	11	27	10	11	<10
Aug. 9/84	3	1	1	1	2	1	<3								8	6	7	15	9	9	<11
Aug. 12/84	1	1	1	4	<1	<1	<2								6	13	51	72	66	29	<12
Aug. 17/84	<1	<1	<1	1	<1	<1	<2								>300	14	12	16	50	>33	><11
Aug. 20/84	1	7	1	2	2	2	<2								15	17	8	10	41	15	><13
Aug. 25/84	1	2	6	1	13	3	<2								27	22	44	43	68	38	><14
Aug. 29/84	6	9	5	9	10	8	<2								1	5	6	7	5	4	>16
Sept. 2/84	1	<1	<1	<1	<1	<1	<2								<1	5	3	3	24	<4	><13

Table 14b: Field observations recorded during the microbiological sample collections at Paloma Beach, Falcon Lake.

Date	Time (CDT)	Air Temp. (°C)	Water Temp. (°C)	Wind Direction	Cloud Cover (%)	Recent Precipitation	Visible Algae	Wave Action	Turbidity	Bather Load	Water Colour	Other
May 17/84	9:20	22	10	onshore	40	light	none	light	clear	0	light	
June 2/84	11:40	20	10	onshore	20	none	none	heavy	clear	2	clear	
June 7/84	-	-	-	-	-	-	-	-	-	-	-	
June 10/84	12:55	8	14	onshore	20	light	none	none	clear	0	clear	
June 15/84	9:10	16	16	onshore	90	light	none	light	clear	0	clear	
June 18/84	11:30	18	-	onshore	90	none	none	none	clear	0	clear	
June 23/84	8:50	17	18	onshore	20	moderate	none	moderate	clear	0	moderate	
June 28/84	11:30	22	21	onshore	0	none	light	moderate	clear	2	clear	
July 1/84	9:00	16	20	onshore	100	light	none	none	clear	0	clear	
July 6/84	11:20	19	20	onshore	10	none	none	light	clear	0	light	
July 9/84	9:00	17	21	onshore	10	none	none	none	clear	0	clear	
July 14/84	11:10	22	24	onshore	0	light	light	none	clear	4	light	
July 19/84	8:50	17	22	onshore	0	none	light	none	clear	0	light	
July 22/84	10:40	24	24	onshore	60	none	moderate	none	clear	4	moderate	
July 27/84	9:00	20	23	offshore	0	none	none	none	clear	0	clear	
July 30/84	11:20	23	23	onshore	100	light	light	none	clear	6	light	
Aug. 4/84	8:50	23	24	onshore	10	none	light	light	clear	0	clear	
Aug. 9/84	11:15	22	23	onshore	90	light	light	light	clear	0	light	
Aug. 12/84	8:45	17	22	onshore	10	none	none	light	clear	0	clear	
Aug. 17/84	11:15	22	22	offshore	10	none	light	none	clear	2	light	
Aug. 20/84	10:50	19	-	onshore	100	heavy	none	none	clear	0	clear	
Aug. 25/84	10:50	22	22	onshore	0	none	light	light	clear	2	light	
Aug. 29/84	10:15	15	20	offshore	100	none	none	none	clear	0	clear	
Sept. 2/84	-	-	-	-	-	-	-	-	-	-	-	

Table 15a: Fecal coliform, Escherichia coli and fecal streptococcus characteristics of Star Lake beach, Star Lake.

Date	Fecal Coliform 1	2	3	4	5	Geo. Mean	30-Day Geo. Mean	Escherichia coli 1	2	3	4	5	Geo. Mean	30-Day Geo. Mean	Fecal Streptococcus 1	2	3	4	5	Geo. Mean	30-Day Geo. Mean
June 15/84	<1	2	<1	1	<1	<1	<1								6	1	2	3	6	3	3
June 18/84	4	1	<1	1	2	<2	<1								7	2	2	2	16	4	3
June 23/84	7	3	8	5	60	9	<2								21	3	1	13	8	6	4
June 28/84	3	2	<1	6	7	<3	<3								14	2	4	28	33	10	5
July 1/84	<1	<1	1	2	<1	<1	<2								4	2	<1	<1	2	<2	<4
July 6/84	1	<1	1	<1	<1	<1	<2								5	1	<1	2	1	<2	<4
July 9/84	2	1	7	3	3	3	<2								3	<1	<1	3	2	<2	<3
July 14/84	5	7	3	<1	12	<4	<2								3	3	<1	2	11	<3	<3
July 19/84	<1	<1	1	<1	<1	<1	<2								<1	1	<1	3	1	<1	<3
July 22/84	<1	1	3	3	2	<2	<2								12	5	3	<1	11	<5	<3
July 27/84	<1	4	2	<1	12	<2	<2								3	2	<1	3	6	<3	<3
July 30/84	4	1	1	2	1	2	<1								4	2	1	2	1	<2	<2
Aug. 4/84	6	-	2	1	1	2	<2								2	-	4	2	17	4	<2
Aug. 9/84	<1	<1	<1	3	3	<2	<2								2	1	<1	6	4	<2	<2
Aug. 12/84	3	1	<1	1	<1	<1	<2								<1	<1	<1	9	3	<2	<2
Aug. 17/84	<1	<1	<1	<1	<1	<1	<1								113	1	<1	1	18	<5	<3
Aug. 20/84	<1	<1	2	<1	<1	<1	<2								3	3	3	1	4	3	<3
Aug. 2/84	<1	<1	<1	1	<1	<1	<1								2	3	1	1	3	2	<2
Aug. 29/84	23	8	9	22	20	15	<2								8	8	3	4	10	6	<3
Sept. 2/84	<1	1	2	<1	<1	<1	<2								<1	2	<1	<1	17	<2	<3

Table 15b: Field observations recorded during the microbiological sample collections at Star Lake beach, Star Lake.

Date	Time (CDT)	Air Temp. (°C)	Water Temp. (°C)	Wind Direction	Cloud Cover (%)	Recent Precipitation	Visible Algae	Wave Action	Turbidity	Bather Load	Water Colour	Other
June 15/84	10:10	17	18	offshore	90	light	none	none	clear	0	clear	
June 18/84	11:10	18	21	offshore	90	none	none	none	clear	0	clear	
June 23/84	9:10	17	21	offshore	20	moderate	none	none	clear	0	light	
June 28/84	11:20	20	23	onshore	0	none	light	none	clear	2	light	
July 1/84	9:20	16	22	offshore	100	light	none	none	clear	0	light	
July 6/84	11:00	18	23	offshore	10	none	light	none	clear	2	light	
July 9/84	9:15	18	23	offshore	10	none	none	none	clear	2	clear	
July 14/84	10:50	22	24	offshore	0	light	light	none	clear	4	light	
July 19/84	9:10	17	21	onshore	0	none	none	moderate	clear	0	light	
July 22/84	10:20	23	24	offshore	60	none	light	none	clear	6	moderate	
July 27/84	9:10	20	23	onshore	0	none	none	none	clear	0	light	
July 30/84	10:55	23	24	offshore	100	light	moderate	none	clear	4	light	
Aug. 4/84	9:20	23	23	offshore	10	none	light	none	clear	0	light	
Aug. 9/84	11:00	21	23	offshore	90	light	light	none	clear	0	light	
Aug. 12/84	9:05	18	23	offshore	10	none	none	none	clear	0	light	
Aug. 17/84	11:00	21	22	onshore	10	none	light	moderate	clear	0	light	
Aug. 20/84	11:10	19	-	onshore	100	heavy	none	none	slight	0	light	
Aug. 25/84	10:30	21	22	offshore	0	none	light	none	clear	3	light	
Aug. 29/84	10:40	15	21	offshore	100	none	light	none	slight	0	clear	
Sept. 2/84	-	-	-	-	-	-	-	-	-	-	-	

Table 16a: Fecal coliform, Escherichia coli and fecal streptococcus characteristics of West Hawk Lake beach, West Hawk Lake.

Date	Fecal Coliform 1	2	3	4	5	Geo. Mean	30-Day Geo. Mean	Escherichia coli 1	2	3	4	5	Geo. Mean	30-Day Geo. Mean	Fecal Streptococcus 1	2	3	4	5	Geo. Mean	30-Day Geo. Mean
May 17/84	<100	<100	<100	<100	<100	<100	<100								<1	<1	<1	<1	<1	<1	<1
June 2/84	<1	<1	<1	<1	<1	<1	<10								<1	<1	<1	<1	<1	<1	<1
June 7/84	1	<1	<1	<1	<1	<1	<5								<1	1	1	<1	1	<1	<1
June 10/84	4	2	<1	1	1	<2	<4								38	42	39	29	21	33	<2
June 15/84	<1	<1	<1	<1	<1	<1	<3								<1	<1	2	2	<1	<1	<2
June 18/84	<1	4	<1	2	2	<2	<3								9	12	10	8	11	10	<3
June 23/84	1	<1	<1	<1	2	<1	<1								5	2	5	3	8	4	<3
June 28/84	3	<1	1	<1	<1	<1	<1								6	1	8	11	4	5	<4
July 1/84	1	<1	<1	2	<1	<1	<1								3	1	10	2	6	3	<4
July 6/84	2	1	1	1	1	<1	<1								6	6	4	4	4	5	<4
July 9/84	1	<1	<1	<1	<1	<1	<1								6	6	2	11	9	6	<5
July 14/84	3	1	<1	1	<1	<1	<1								16	8	7	22	10	11	<5
July 19/84	<1	2	<1	<1	<1	<1	<1								4	3	<1	3	2	<2	<5
July 22/84	1	1	61	4	3	4	<1								30	4	28	61	55	26	<6
July 27/84	1	3	1	<1	2	<1	<1								5	2	7	5	10	5	<6
July 30/84	9	<1	1	<1	97	<4	<2								7	4	5	3	3	4	<6
Aug. 4/84	1	1	2	1	22	2	<2								9	9	14	18	74	17	<7
Aug. 9/84	10	7	13	6	2	6	<2								8	5	6	4	10	6	<7
Aug. 12/84	2	1	<1	1	<1	<1	<2								<1	170	1	2	3	<4	<7
Aug. 17/84	8	1	3	<1	<1	<2	<2								19	3	49	10	112	20	<8
Aug. 20/84	4	8	<1	<1	<1	<2	<2								7	3	1	<1	<1	<2	<7
Aug. 25/84	<1	<1	<1	<1	<1	<1	<2								3	4	7	5	1	3	<6
Aug. 29/84	<1	<1	1	1	<1	<1	<1								5	3	2	1	1	2	<5
Sept. 2/84	<1	<1	<1	<1	<1	<1	<2								1	1	<1	1	1	<1	<4
May 29/85	<10	<10	<10			<10	<10	<10	<10	<10			<10	<10	3	1	3			2	2
June 6/85	<10	<10	<10			<10	<10	<10	<10	<10			<10	<10	<1	4	2			<2	<2
June 10/85	<1	<1	<1			<1	<5	<1	<1	1			<1	<5	4	4	4			4	<3
June 17/85	<1	<1	<1			<1	<3	<1	<1	<1			<1	<3	4	<1	4			<3	<3
June 28/85	2	2	1			2	<2	<1	1	2			<1	<1	7	7	8			7	<9
July 6/85	<1	10	5			<4	<2	<1	1	4			<2	<2	10	17	10			<12	<4
July 12/85	2	2	<1			<2	<2	2	4	<1			<2	<1	70	89	51			68	<13
July 18/85	<10	11	15			5	<2	3	8	24			8	<2	24	35	88			42	<14
July 29/85	<1	2	<1			<1	<4	1	<1	<1			<1	<4	10	73	4			14	<26
Aug. 5/85	2	1	2			2	<2	4	3	11			5	<3	11	28	8			14	23
Aug. 19/85	<1	<1	<1			<1	<2	1	1	2			1	<3	43	4	6			10	17
Aug. 25/85	<1	<1	<1			<1	<1	<1	1	<1			<1	<3	2	2	19			4	10
June 14/86	<1	<1	<1			<1	<1	<1	<1	<1			<1		<1	<1	4			<2	<2
June 22/86	1	<1	<1			<1	<1								6	1	3			3	<2
July 6/86	<1	<1	<1			<1	<1	<1	<1	1			<1		15	23	12			16	<4
Aug. 18/86	8	5	5			6	<2								89	66	68			74	15
July 31/86	2	1	5			2	<2								3	5	7			5	18
Aug. 2/86	<1	<1	1			<1	<2								2	5	6			4	12
Aug. 9/86	1	1	1			1	<2	3	1	1			1		12	26	10			15	12
Aug. 24/86	1	2	1			<1	<1								1	4	4			3	5
June 6/87	18	1	<1			<3	<3								<10	<10	<10			<10	<10
June 14/87	6	6	9			7	<2								1	<1	<1			<1	<3
June 26/87	16	18	18			17	<7								1	1	1			1	<2
July 11/87	4	4	2			3	7								<1	<1	<1			<1	<1
July 19/87	2	6	2			3	5								1	<1	<1			<1	<1
July 31/87	31	40	77			46	7								4	4	3			4	<2

Table 16b: Field observations recorded during the microbiological sample collections at West Hawk Lake beach, West Hawk Lake.

Date	Time (CDT)	Air Temp. (°C)	Water Temp. (°C)	Wind Direction	Cloud Cover (%)	Recent Precipitation	Visible Algae	Wave Action	Turbidity	Bather Load	Water Colour	Other
May 17/84	9:40	20	9	offshore	30	light	none	none	clear	0	clear	
June 2/84	10:50	20	9	offshore	30	none	none	none	clear	8	clear	
June 7/84	11:25	17	11	onshore	30	heavy	none	none	clear	0	clear	
June 10/84	12:25	8	13	onshore	25	light	none	none	slight	0	clear	
June 15/84	9:40	17	13	offshore	90	light	none	none	clear	0	clear	
June 18/84	10:40	17	18	onshore	90	none	none	light	clear	0	clear	
June 23/84	9:30	18	17	offshore	10	moderate	none	none	clear	2	clear	
June 28/84	10:45	20	20	onshore	0	none	none	none	clear	8	clear	
July 1/84	9:40	17	19	offshore	100	light	none	none	clear	0	clear	
July 6/84	10:40	18	20	offshore	10	none	none	none	clear	6	clear	
July 9/84	9:30	18	21	onshore	10	none	none	none	clear	6	clear	
July 14/84	10:20	21	22	offshore	0	light	none	none	clear	250	clear	
July 19/84	9:30	18	21	onshore	0	none	none	moderate	clear	0	clear	
July 22/84	10:00	23	21	onshore	60	none	none	none	clear	35	clear	
July 27/84	9:30	20	22	onshore	0	none	none	none	clear	4	clear	
July 30/84	10:30	23	21	offshore	90	light	none	none	clear	4	clear	
Aug. 4/84	9:40	23	23	offshore	10	none	none	none	clear	20	clear	
Aug. 9/84	10:30	20	23	offshore	90	light	none	light	clear	0	clear	
Aug. 12/84	9:25	19	22	offshore	10	none	none	none	clear	0	clear	
Aug. 17/84	10:40	20	22	onshore	10	none	light	moderate	clear	6	clear	
Aug. 20/84	11:30	19	-	-	100	heavy	none	none	clear	0	clear	
Aug. 25/84	10:10	21	21	offshore	0	none	none	none	clear	8	clear	
Aug. 29/84	10:55	17	21	onshore	100	none	none	none	clear	0	clear	
Sept. 2/84	-	-	-	-	-	-	-	-	-	-	-	
May 29/85	9:00	15	11	onshore	100	light	none	none	clear	0	clear	
June 6/85	12:35	18	10	offshore	100	light	none	none	clear	0	clear	
June 10/85	9:20	13	11	onshore	10	light	none	none	clear	1	clear	
June 17/85	12:25	15	14	onshore	80	light	none	light	clear	0	clear	
June 28/85	9:25	13	13	offshore	100	moderate	light	light	clear	0	clear	
July 6/85	11:10	23	20	offshore	10	light	none	light	clear	80	clear	
July 12/85	9:20	18	21	offshore	0	none	none	none	clear	3	clear	
July 18/85	12:25	23	20	offshore	10	none	none	light	clear	60	clear	
July 29/85	9:10	17	19	offshore	0	none	none	none	clear	0	clear	
Aug. 5/85	11:45	22	19	offshore	100	none	light	light	clear	0	clear	
Aug. 19/85	9:00	10	16	onshore	70	moderate	none	light	clear	0	clear	
Aug. 25/85	11:15	19	17	onshore	0	light	none	light	clear	6	clear	
June 14/86	8:50	12	17	offshore	50	light	light	none	clear	0	clear	
June 22/86	11:00	21	18	offshore	50	light	none	none	clear	0	clear	
July 6/86	8:15	16	19	offshore	50	moderate	light	light	clear	0	clear	
July 18/86	9:25	20	19	offshore	20	light	none	light	clear	2	clear	
July 31/86	9:25	17	21	onshore	100	light	light	light	clear	0	clear	
Aug. 2/96	8:35	16	20	onshore	30	light	light	light	clear	1	clear	
Aug. 9/86	8:30	16	20	offshore	50	light	light	light	clear	0	clear	
Aug.24/86	8:20	13	19	offshore	50	none	none	none	clear	0	clear	
June 6/87	8:30	18	15	onshore	100	moderate	none	none	clear	0	clear	
June 14/87	8:30	20	16	offshore	0	none	none	none	clear	0	clear	
June 26/87	9:35	16	19	onshore	50	light	light	light	clear	0	clear	
July 11/87	10:00	15	20	onshore	100	moderate	none	light	clear	0	clear	
July 19/87	9:40	18	22	onshore	30	light	none	none	clear	0	clear	
July 31/87	9:40	22	22	offshore	100	heavy	light	light	slight	0	clear	

Table 17a: Fecal coliform, Escherichia coli and fecal streptococcus characteristics of Caddy Lake beach, Caddy Lake.

Date	Fecal Coliform 1	2	3	4	5	Geo. Mean	30-Day Geo. Mean	Escherichia coli 1	2	3	4	5	Geo. Mean	30-Day Geo. Mean	Fecal Streptococcus 1	2	3	4	5	Geo. Mean	30-Day Geo. Mean
May 17/84	<100	<100	<100	<100	<100	<100	<100								<1	17	<1	<1	<1	<2	<2
June 2/84	<1	2	2	<1	<1	<1	<11								1	<1	<1	<1	<1	<1	<1
June 7/84	144	157	132	125	150	141	<27								111	96	95	69	83	90	<5
June 10/84	13	17	12	10	6	11	<21								43	26	44	26	27	32	<8
May 29/85	<10	<10	<10			<10	<10	<10	<10	<10			<10	<10	5	8	4			6	6
June 6/85	<10	<10	<10			<10	<10	<10	<10	<10			<10	<10	4	5	<1			<3	<5
June 10/85	1	2	1			1	<5	<1	<1	1			1	<5	8	4	7			6	<4
June 17/85	1	2	<1			1	<4	2	1	2			2	<4	18	2	6			6	<5
June 28/85	4	4	2			3	<2	6	5	3			4	<2	22	19	21			21	<8
July 6/85	4	22	27			13	<4	<1	31	49			<12	<4	2	15	25			9	<5
July 12/85	1	1	<1			<1	<3	<1	<1	<1			<1	<3	2	7	10			5	<7
July 18/85	1	<1	<1			<1	<2	2	1	<1			<1	<3	10	2	15			7	<8
July 29/85	83	13	17			26	<4	88	8	18			23	<4	13	<1	<1			2	<5
Aug. 5/85	61	48	65			58	<7	30	50	268			74	<8	30	45	47			40	<8
Aug. 19/85	14	4	8			8	<10	45	4	4			9	<12	6	65	88			33	<12
Aug. 25/85	16	2	1			3	<8	19	6	1			5	10	12	1	10			5	<10
June 14/86	<1	<1	<1			<1	<1	7	<1	12			<7		5	9	9			8	8
June 22/86	1	2	1			11	<4								15	13	18			15	11
July 6/86	11	9	13			20	10	16	25	11			16		21	13	11			14	12
July 18/86	11	16	43			12	9								165	31	27			52	17
July 31/86	2	37	25			9	9								17	10	12			13	21
Aug. 2/86	16	16	29			20	12								3	6	1			3	13
Aug. 9/86	3	6	7			5	6	13	3	10			7		>300	29	29			>63	>18
Aug. 24/86	5	1	1			3	7								2	<1	1			<1	><6

Table 17b: Field observations recorded during the microbiological sample collections at Caddy Lake beach, Caddy Lake.

Date	Time (CDT)	Air Temp. (°C)	Water Temp. (°C)	Wind Direction	Cloud Cover (%)	Recent Precipitation	Visible Algae	Wave Action	Turbidity	Bather Load	Water Colour	Other
May 17/84	10:40	20	13	offshore	10	light	none	none	clear	0	clear	
June 2/84	10:10	20	16	offshore	30	none	none	none	clear	0	clear	
June 7/84	12:05	20	18	offshore	25	heavy	light	none	slight	0	clear	
June 10/84	12:00	8	17	onshore	25	light	light	none	slight	0	clear	
May 29/85	9:15	15	16	offshore	100	light	light	none	clear	0	light	
June 6/85	12:15	18	15	onshore	100	light	light	light	clear	0	light	
June 10/85	9:45	13	16	onshore	15	light	moderate	none	slight	0	light	
June 17/85	12:00	14	18	offshore	80	light	moderate	light	slight	0	light	
June 28/85	9:45	13	16	offshore	100	moderate	moderate	light	slight	0	light	
July 6/85	10:45	22	21	offshore	10	light	light	light	slight	6	light	
July 12/85	9:50	20	22	offshore	0	none	light	none	clear	1	light	
July 18/85	12:00	22	23	offshore	20	none	moderate	light	slight	6	light	
July 29/85	9:40	17	20	onshore	0	none	light	none	clear	1	light	
Aug. 5/85	11:15	22	20	offshore	100	moderate	light	light	clear	0	light	
Aug. 19/85	9:25	12	16	onshore	60	light	light	light	clear	0	light	
Aug. 25/85	10:55	19	17	onshore	0	light	light	light	slight	6	light	
June 14/86	9:15	14	18	onshore	80	light	light	light	slight	0	light	
June 22/86	10:35	20	20	offshore	50	light	light	light	clear	0	light	
July 7/86	8:40	16	19	offshore	50	moderate	moderate	light	slight	0	light	
July 18/86	9:45	20	21	onshore	20	light	light	light	clear	0	light	
July 31/86	9:45	17	22	offshore	100	light	moderate	light	slight	0	moderate	
Aug. 2/86	8:55	17	22	onshore	30	light	moderate	light	slight	0	light	
Aug. 9/86	8:55	16	21	offshore	70	light	moderate	light	slight	0	light	
Aug. 24/86	8:40	13	20	offshore	50	none	moderate	none	slight	0	light	

Table 18a: Fecal coliform, Escherichia coli and fecal streptococcus characteristics of Brereton Lake (campground beach), Brereton Lake.

Date	Fecal Coliform 1	2	3	4	5	Geo. Mean	30-Day Geo. Mean	Escherichia coli 1	2	3	4	5	Geo. Mean	30-Day Geo. Mean	Fecal Streptococcus 1	2	3	4	5	Geo. Mean	30-Day Geo. Mean
May 29/85	<10	<10	<10			<10	<10	<10	<10	<10			<10	<10	1	1	1			1	1
June 6/85	10	10	<10			<10	<10	<10	<10	<10			<10	<10	2	1	<1			<1	<1
June 10/85	<1	<1	<1			<1	<5	2	<1	<1			<1	<5	1	2	7			2	<1
June 17/85	2	8	5			4	<5	3	5	5			4	<5	27	22	31			26	<3
June 28/85	4	122	174			44	<9	10	107	120			50	<10	179	>300	>300			<>253	<>25
July 6/85	14	10	4			7	<4	12	14	10			12	<5	38	16	58			33	<5
July 12/85	28	73	26			38	<6	60	78	12			38	<7	51	16	9			9	<14
July 18/85	3	15	21			10	<14	21	13	15			16	<17	51	41	56			49	>46
July 29/85	9	<1	<1			<2	<9	7	<1	<1			2	<11	17	5	6			8	22
Aug. 5/85	3	3	17			5	<8	1	7	14			5	<9	12	46	14			20	22
Aug. 19/85	<1	1	1			<1	<3	1	1	3			1	<4	4	5	9			6	14
Aug. 25/85	1	<1	3			<1	<3	58	<1	1			<4	<4	8	2	1			3	10
June 14/86	<1	1	1			<1	<1	21	49	36			35		6	1	3			3	3
June 22/86	5	4	6			5	<2								20	15	22			19	7
July 6/86	<1	8	4			<3	<3	93	31	80			61		24	36	>300			>64	>15
July 18/86	4	<1	4			<3	<3								10	80	40			32	32
July 31/86	7	3	10			6	<4								29	31	48			35	34
Aug. 2/86	2	1	<1			<1	<3								<1	6	17			<5	<21
Aug. 9/86	13	<1	2			<3	<3	13	1	2			3		>300	>300	>300			>300	>30
Aug. 24/86	1	<1	1			<1	<2								1	1	2			1	><16
June 6/87	1	2	3			2	4								<10	10	<10			<10	<10
June 14/87	9	9	6			8	4								1	<1	4			<2	<4
June 26/87	>300	216	224			>244	>15								2	<1	5			<2	<3
July 11/87	6	5	2			4	>20								<1	<1	<1			<1	<2
July 19/87	4	2	2			3	>13								<1	<1	2			<1	<1
July 31/87	264	133	>300			>236	>13								90	<1	>300			30	><3

Table 18b: Field observations recorded during the microbiological sample collections at Brereton Lake (campground beach), Brereton Lake.

Date	Time (CDT)	Air Temp. (°C)	Water Temp. (°C)	Wind Direction	Cloud Cover (%)	Recent Precipitation	Visible Algae	Wave Action	Turbidity	Bather Load	Water Colour	Other
May 29/85	9:45	15	17	offshore	100	light	light	none	clear	0	moderate	
June 6/85	11:40	18	15	offshore	100	light	light	light	clear	0	moderate	
June 10/85	10:30	13	15	onshore	25	light	light	moderate	slight	0	light	
June 17/85	11:25	12	18	onshore	80	light	light	moderate	slight	0	moderate	
June 28/85	10:15	14	15	offshore	100	moderate	light	light	slight	1	moderate	
July 6/85	10:15	20	22	onshore	10	light	moderate	light	slight	5	moderate	
July 12/85	10:25	22	22	offshore	0	none	light	none	clear	6	moderate	
July 18/85	11:25	21	22	onshore	20	none	moderate	light	clear	20	moderate	
July 29/85	10:25	17	20	onshore	0	none	moderate	none	clear	4	moderate	
Aug. 5/85	10:30	22	20	offshore	100	moderate	moderate	light	clear	0	moderate	
Aug. 19/85	10:10	12	16	onshore	50	light	moderate	light	clear	0	moderate	
Aug. 25/85	10:20	18	17	offshore	0	light	heavy	light	moderate	3	moderate	
June 14/86	9:30	14	18	onshore	80	light	moderate	light	slight	0	heavy	
June 22/86	10:00	20	19	onshore	50	light	moderate	light	clear	0	heavy	
July 6/86	9:20	16	19	onshore	50	moderate	moderate	crests	slight	0	heavy	
July 18/86	10:25	22	21	onshore	20	light	moderate	light	slight	6	moderate	
July 31/86	10:25	18	22	onshore	100	light	moderate	moderate	slight	0	heavy	
Aug. 2/86	9:30	18	22	onshore	50	light	moderate	moderate	slight	0	moderate	
Aug. 9/86	9:30	18	22	onshore	70	light	moderate	moderate	slight	2	moderate	
Aug. 24/86	9:20	14	20	onshore	50	light	moderate	light	slight	0	moderate	
June 6/87	9:20	18	17	onshore	100	heavy	moderate	light	slight	0	heavy	
June 14/87	9:10	21	22	onshore	0	none	moderate	moderate	slight	1	heavy	
June 26/87	10:10	18	21	onshore	50	moderate	moderate	crests	slight	0	heavy	
July 11/87	10:40	16	22	onshore	100	moderate	light	crests	slight	0	moderate	
July 19/87	10:20	20	23	onshore	30	light	moderate	moderate	slight	3	moderate	
July 30/87	10:20	24	23	onshore	100	heavy	moderate	light	slight	0	moderate	

Table 19a: Fecal coliform, Escherichia coli and fecal streptococcus characteristics of Jessica Lake (resort beach), Jessica Lake.

Date	Fecal Coliform 1	2	3	4	5	Geo. Mean	30-Day Geo. Mean	Escherichia coli 1	2	3	4	5	Geo. Mean	30-Day Geo. Mean	Fecal Streptococcus 1	2	3	4	5	Geo. Mean	30-Day Geo. Mean
May 29/85	<10	<10	<10			<10	<10	<10	<10	10			<10	<10	174	300	206			220	220
June 6/85	<10	<10	20			<10	<10	10	10	<10			<10	<10	>300	>300	>300			>300	>257
June 10/85	<1	<1	1			<1	<5	1	1	<1			<1	<5	1	3	6			3	>56
June 17/85	2	2	2	3	1	2	<4	<1	3	1	<1	1	<1	<3	4	<1	4	6	26	<5	23
June 28/85	4	2	3	5	4	3	<2	2	4	4	7	1	3	<1	6	18	37	44	43	24	<>12
July 6/85	4	2	8	6	5	5	<3	<1	2	<1	1	1	<1	<2	32	14	26	41	31	27	<>16
July 12/85	1	1	2	2	<1	<1	<2	<1	1	1	3	1	<1	<1	20	7	13	20	23	15	<>13
July 18/85	5	<1	1	3	6	<2	<2	7	3	4	2	1	3	<2	103	104	72	96	89	92	31
July 29/85	3	4	2	7	1	3	<2	5	3	3	7	3	4	<2	16	29	23	17	29	22	30
Aug. 5/85	<1	3	2	<1	<1	<1	<2	3	8	2	2	4	3	<2	30	41	84	78	68	56	34
Aug. 19/85	1	7	3	6	3	3	<2	12	11	4	1	6	5	4	27	25	23	27	156	37	45
Aug. 25/85	1	1	<1	<1	<1	<1	<2	2	<1	2	2	1	<2	<3	7	5	<1	1	<1	<2	24
June 6/87	162	87	63			96	96								73	60	29			50	50
June 14/87	52	67	>300			>101	>99								1	<1	5			<2	<9
June 26/87	>300	>300	>300			>300	>143								14	6	6			8	<9
July 11/87	<1	<1	<1			<1	><31								<1	<1	<1			<1	<2
July 19/87	13	18	22			17	><30								13	18	22			17	<5
July 31/87	>300	>300	96			>205	><26								>300	>300	96			>205	><15

Table 19b: Field observations recorded during the microbiological sample collections at Jessica Lake (resort beach), Jessica Lake.

Date	Time (CDT)	Air Temp. (°C)	Water Temp. (°C)	Wind Direction	Cloud Cover (%)	Recent Precipitation	Visible Algae	Wave Action	Turbidity	Bather Load	Water Colour	Other
May 29/85	10:20	16	16	onshore	100	light	light	moderate	slight	0	light	
June 6/85	11:20	17	15	onshore	100	light	light	moderate	clear	0	moderate	
June 10/85	11:05	15	16	offshore	30	light	light	light	moderate	0	light	
June 17/85	11:00	12	18	offshore	90	light	moderate	light	slight	4	moderate	
June 28/85	10:40	14	15	onshore	100	moderate	moderate	light	slight	0	light	
July 6/85	9:45	19	21	onshore	10	light	light	none	slight	3	light	
July 12/85	10:50	23	24	offshore	0	none	moderate	none	clear	0	moderate	
July 18/85	10:55	20	21	onshore	20	none	moderate	none	slight	0	light	
July 29/85	10:55	17	21	offshore	0	none	moderate	none	clear	0	light	
Aug. 5/85	10:00	21	21	onshore	100	moderate	moderate	light	clear	0	moderate	
Aug. 19/85	10:40	14	16	offshore	30	light	light	light	clear	0	moderate	
Aug. 25/85	9:50	18	17	offshore	0	light	heavy	light	slight	0	moderate	
June 6/87	9:55	18	17	onshore	100	moderate	light	moderate	slight	0	moderate	
June 14/87	9:45	21	22	offshore	0	none	moderate	light	slight	0	moderate	
June 26/87	10:45	19	20	offshore	50	moderate	light	light	slight	0	moderate	
July 11/87	11:20	18	20	offshore	100	moderate	light	light	slight	2	moderate	
July 19/87	10:55	24	22	offshore	30	light	moderate	light	slight	0	moderate	
July 31/87	10:55	24	23	offshore	100	heavy	moderate	light	moderate	0	light	

Table 20a: Fecal coliform, Escherichia coli and fecal streptococcus characteristics of Big Whiteshell Lake (campground beach), Big Whiteshell Lake.

Date	Fecal Coliform 1	2	3	4	5	Geo. Mean	30-Day Geo. Mean	Escherichia coli 1	2	3	4	5	Geo. Mean	30-Day Geo. Mean	Fecal Streptococcus 1	2	3	4	5	Geo. Mean	30-Day Geo. Mean
May 29/85	<10	<10	<10			<10	<10	<10	<10	<10			<10	<10	12	5	3			6	6
June 6/85	10	<10	<10			<10	<10	<10	<10	10			<10	<10	10	45	15			19	10
June 10/85	<1	<1	<1			<1	<5	3	<1	<1			<1	<5	3	7	9			6	8
June 17/85	8	3	2			4	<4	3	3	1			2	<4	14	23	12			16	10
June 28/85	5	1	5			3	<4	5	9	6			7	<4	63	200	40			80	23
July 6/85	5	6	10			7	<4	6	5	8			6	<4	44	31	7			21	14
July 12/85	1	11	154			12	<7	1	4	124			8	<5	26	41	86			45	25
July 18/85	14	6	3			6	6	20	1	1			3	<5	78	14	25			30	39
July 29/85	1	<1	<1			<1	<6	1	2	<1			<1	<4	14	45	15			25	29
Aug. 5/85	<1	1	<1			<1	<4	4	1	3			<2	<3	48	25	16			27	28
Aug. 19/85	3	4	5			4	<2	16	9	4			8	<3	29	34	39			34	27
Aug. 25/85	2	<1	<1			<1	<1	2	3	4			3	<3	6	18	4			8	20

Table 20b: Field observations recorded during the microbiological sample collections at Big Whiteshell Lake (campground beach), Big Whiteshell Lake.

Date	Time (CDT)	Air Temp. (°C)	Water Temp. (°C)	Wind Direction	Cloud Cover (%)	Recent Precipitation	Visible Algae	Wave Action	Turbidity	Bather Load	Water Colour	Other
May 29/85	10:55	16	15	onshore	100	light	light	light	clear	0	light	
June 6/85	10:50	17	15	offshore	100	light	light	light	clear	0	moderate	
June 10/85	11:40	15	17	onshore	40	light	moderate	moderate	slight	0	light	
June 17/85	10:30	11	18	offshore	75	light	moderate	light	slight	0	moderate	
June 28/85	11:10	14	15	offshore	100	moderate	heavy	light	slight	0	moderate	
July 6/85	9:15	16	18	offshore	20	light	moderate	none	slight	2	moderate	
July 12/85	11:25	24	21	offshore	0	none	moderate	none	moderate	16	light	
July 18/85	10:20	20	21	offshore	20	none	moderate	none	clear	6	light	
July 29/85	11:30	18	20	onshore	0	none	moderate	none	clear	10	light	
Aug. 5/85	9:15	21	20	offshore	100	moderate	moderate	light	clear	8	light	
Aug. 19/85	11:15	14	15	onshore	30	light	light	light	clear	0	light	
Aug. 25/85	9:25	17	17	onshore	10	light	moderate	light	clear	0	light	

Table 21a: Fecal coliform, Escherichia coli and fecal streptococcus characteristics of Red Rock Lake beach, Red Rock Lake.

Date	Fecal Coliform 1	2	3	4	5	Geo. Mean	30-Day Geo. Mean	Escherichia coli 1	2	3	4	5	Geo. Mean	30-Day Geo. Mean	Fecal Streptococcus 1	2	3	4	5	Geo. Mean	30-Day Geo. Mean
June 14/86	1	<1	<1			<1	<1	4	<1	3			<3		3	2	3			3	3
June 22/86	2	<1	2			<2	<1								12	10	15			12	6
July 6/86	<1	1	1			<1	<1	5	5	<1			<3		15	10	17			14	8
July 18/86	3	11	4			5	<2								>300	>300	150			>239	>34
July 31/86	9	13	5			8	<3								>300	>300	>300			>300	>100
Aug. 2/86	3	2	1			2	3								446	27	400			169	>101
Aug. 9/86	8	8	9			8	5	18	11	14			14		320	310	320			317	>287
Aug. 24/86	19	18	19			19	7								2	3	4			3	>66
June 6/87	69	64	39			56	56								30	33	23			28	28
June 14/87	>300	>300	>300			>300	>130								7	7	10			8	15
June 26/87	>300	>300	>300			>300	>172								3	3	3			3	9
July 11/87	186	154	115			149	>239								<1	<1	<1			<1	<3
July 19/87	79	65	43			60	>140								48	21	25			29	<4
July 31/87	>300	>300	>300			>300	>140								>300	>300	>300			>300	><21

Table 21b: Field observations recorded during the microbiological sample collections at Red Rock Lake beach, Red Rock Lake.

Date	Time (CDT)	Air Temp. (°C)	Water Temp. (°C)	Wind Direction	Cloud Cover (%)	Recent Precipitation	Visible Algae	Wave Action	Turbidity	Bather Load	Water Colour	Other
June 14/86	9:55	16	17	offshore	80	light	light	light	slight	0	moderate	
June 22/86	9:35	20	20	offshore	50	light	light	light	clear	0	moderate	
July 6/86	9:50	16	20	onshore	50	moderate	light	crests	slight	0	moderate	
July 18/86	10:50	23	22	onshore	20	light	moderate	light	slight	4	moderate	
July 31/86	10:50	18	22	onshore	100	light	moderate	crests	slight	2	moderate	
Aug. 2/86	9:55	18	22	onshore	50	light	moderate	light	slight	2	moderate	
Aug. 9/86	9:55	18	22	onshore	70	light	light	moderate	slight	4	moderate	
Aug. 24/86	9:40	15	20	onshore	50	light	moderate	light	slight	0	moderate	
June 6/87	9:40	18	18	offshore	100	moderate	light	light	slight	0	moderate	
June 14/87	9:30	21	22	onshore	0	none	moderate	moderate	slight	2	moderate	
June 26/87	10:30	18	21	onshore	50	moderate	light	crests	slight	0	moderate	
July 11/87	11:00	16	21	onshore	100	moderate	light	crests	slight	0	moderate	
July 19/87	10:40	22	23	onshore	20	light	moderate	moderate	slight	1	light	
July 31/87	10:40	24	23	onshore	100	heavy	moderate	light	slight	0	light	

Table 22a: Fecal coliform, Escherichia coli and fecal streptococcus characteristics of White Lake beach, White Lake.

Date	Fecal Coliform 1	2	3	4	5	Geo. Mean	30-Day Geo. Mean	Escherichia coli 1	2	3	4	5	Geo. Mean	30-Day Geo. Mean	Fecal Streptococcus 1	2	3	4	5	Geo. Mean	30-Day Geo. Mean
June 14/86	9	<1	4			<5	<5	7	13	9			29		12	9	7			9	9
June 22/86	4	2	2			3	<4								16	15	11			14	12
July 6/86	11	15	17			14	<7	42	4	28			25		>300	>300	>300			>300	108
July 22/86	4	5	5			5	<7								80	100	130			101	139
July 31/86	1	5	NR			2	6								16	33	NR			23	>105
Aug. 2/86	3	8	<1			<3	<5								42	56	29			41	>81
Aug. 9/86	8	8	6			7	<4	8	11	6			8		21	23	37			26	42
Aug. 24/86	34	20	18			23	<6								1	3	2			2	14
June 6/87	2	3	1			2	2								12	5	6			7	7
June 14/86	16	27	17			19	6								10	4	5			6	6
June 26/87	9	3	11			7	6								3	3	3			3	5
July 11/87	4	4	3			4	8								<1	<1	<1			<1	<3
July 19/87	6	26	39			18	8								4	6	4			5	<2
July 31/87	120	130	140			130	21								155	120	250			167	<9

Table 22b: Field observations recorded during the microbiological sample collections at White Lake beach, White Lake.

Date	Time (CDT)	Air Temp. (°C)	Water Temp. (°C)	Wind Direction	Cloud Cover (%)	Recent Precipitation	Visible Algae	Wave Action	Turbidity	Bather Load	Water Colour	Other
June 14/86	10:20	16	18	onshore	80	light	moderate	light	slight	0	heavy	
June 22/86	9:15	20	20	offshore	50	light	moderate	light	clear	0	heavy	
July 6/86	10:10	16	20	onshore	50	moderate	moderate	crests	slight	0	moderate	
July 18/86	11:10	23	23	onshore	20	light	moderate	light	slight	10	heavy	
July 31/86	11:10	18	23	onshore	100	light	moderate	crests	slight	10	heavy	
Aug. 2/86	10:10	20	23	onshore	50	light	moderate	moderate	slight	6	moderate	
Aug. 9/86	10:15	18	21	onshore	100	light	moderate	moderate	slight	3	moderate	
Aug. 24/86	10:00	15	21	onshore	50	light	heavy	light	slight	0	moderate	
June 6/87	10:10	18	18	offshore	100	moderate	moderate	light	slight	0	moderate	
June 14/87	10:05	22	22	onshore	0	none	moderate	light	slight	2	moderate	
June 26/87	11:00	19	20	onshore	50	moderate	light	crests	slight	0	moderate	
July 11/87	11:35	18	21	onshore	100	moderate	light	crests	slight	0	moderate	
July 19/87	11:10	24	23	onshore	30	light	light	moderate	moderate	0	light	
July 31/87	11:10	24	23	onshore	100	heavy	light	light	moderate	0	moderate	

Table 23a: Fecal coliform, Escherichia coli and fecal streptococcus characteristics of Betula Lake beach, Betula Lake.

Date	Fecal Coliform 1	2	3	4	5	Geo. Mean	30-Day Geo. Mean	Escherichia coli 1	2	3	4	5	Geo. Mean	30-Day Geo. Mean	Fecal Streptococcus 1	2	3	4	5	Geo. Mean	30-Day Geo. Mean
May 17/84	<100	<100	<100	<100	<100	<100	<100								7	-	1	<1	1	<2	<2
June 2/84	9	6	8	2	5	5	<23								<1	1	2	2	<1	<1	<1
June 7/84	5	6	3	2	1	3	<11								13	15	8	7	4	8	<3
June 10/84	6	4	7	13	7	7	<10								10	3	2	8	8	5	<3
June 15/84	<1	5	<1	1	<1	<1	<8								18	71	25	6	12	19	<5
June 18/84	2	1	1	1	7	2	<5								8	5	2	4	2	4	<4
June 23/84	17	3	2	14	27	8	<4								81	25	34	76	47	48	<8
June 28/84	8	2	9	3	8	5	<4								33	10	22	<1	4	<8	<8
July 1/84	4	<1	3	<1	<1	<2	<3								25	6	3	6	8	7	<8
July 6/84	4	<1	6	2	16	<4	<3								5	14	16	28	38	16	<10
July 9/84	1	3	<1	8	<1	<2	<3								28	13	16	3	5	10	<11
July 14/84	3	24	3	2	<1	<3	<3								33	37	12	11	19	20	<12
July 19/84	17	55	59	55	39	41	<4								20	11	16	15	6	13	<12
July 22/84	3	4	<1	1	<1	<2	<4								4	2	42	30	3	8	<13
July 27/84	15	18	22	4	25	14	<5								44	31	21	30	21	28	<12
July 30/84	<1	<1	1	<1	<1	<1	<4								8	12	10	5	8	8	12
Aug. 4/84	4	<1	<1	<1	<1	<1	<4								33	59	38	31	34	38	15
Aug. 9/84	<1	1	3	<1	<1	<1	<3								12	5	5	7	10	7	14
Aug. 12/84	109	195	8	9	50	38	<5								9	10	9	12	147	17	15
Aug. 17/84	8	6	4	9	9	7	<5								15	44	49	28	27	30	15
Aug. 20/84	2	<1	1	1	<1	<1	<3								7	7	6	11	4	7	14
Aug. 25/84	<1	<1	<1	1	1	<1	<3								19	14	24	19	20	19	16
Aug. 29/84	1	<1	1	<1	4	<1	<2								3	3	3	2	28	4	13
Sept. 2/84	<1	<1	<1	2	<1	<1	<2								5	<1	1	2	9	<2	11
May 29/85	<10	<10	<10			<10	<10	<10	<10	<10			<10	<10	>300	65	59			>105	>105
June 6/85	<10	<10	<10			<10	<10	<10	<10	<10			<10	<10	5	7	11			28	7
June 10/85	1	1	<1			<1	<5	<1	1	<1			<1	<5	11	6	11			9	>19
June 17/85	1	<1	<1			<1	<3	1	<1	1			<1	<3	4	6	6			5	>14
June 28/85	<1	<1	<1			<1	<2	1	1	1			1	<2	2	9	2			3	>13
July 6/85	10	5	8			7	<3	MR	9	6			7	<3	32	29	26			29	10
July 12/85	12	10	3			7	<2	11	16	<1			6	<3	74	80	80			78	23
July 18/85	1	2	<1			<1	<3	3	<1	<1			<1	<3	82	83	103			89	29
July 29/85	<1	1	<1			<1	<3	<1	2	<1			<1	<5	38	60	48			48	56
Aug. 5/85	<1	<1	<1			<1	<2	1	1	1			1	<2	18	21	15			18	44
Aug. 19/85	<1	<1	<1			<1	<1	<1	1	<1			<1	<1	6	9	8			5	16
Aug. 25/85	2	2	1			2	<1	2	5	3			3	<1	13	10	22			14	16
June 14/86	<1	<1	<1			<1	<1	1	1	2			1		7	6	2			5	5
June 22/86	3	1	<1			<2	<1								19	10	13			14	10
July 6/86	1	1	<1			<1	<1	2	5	4			4		>300	>300	>300			>300	106
July 18/86	9	31	9			16	<5								720	130	240			363	171
July 31/86	7	1	6			3	<4								43	40	82			52	>164
Aug. 2/86	1	<1	6			<2	<3								6	4	15			7	>75
Aug. 9/86	1	2	<1			<1	<3	1	1	3			1		53	88	14			40	45
Aug. 24/86	5	10	3			5	<3								2	5	2			3	14
June 6/87	4	4	6			5	5								3	1	2			2	2
June 14/87	24	18	27			23	10								11	15	11			12	5
June 26/87	18	42	21			25	14								10	9	13			11	6
July 11/87	13	8	3			7	16								<1	<1	<1			<1	<5
July 19/87	22	22	20			21	15								6	6	4			5	<4
July 31/87	41	68	>300			>94	>24								45	15	13			21	<5

Table 23b: Field observations recorded during the microbiological sample collections at Betula Lake beach, Betula Lake.

Date	Time (CDT)	Air Temp. (°C)	Water Temp. (°C)	Wind Direction	Cloud Cover (%)	Recent Precipitation	Visible Algae	Wave Action	Turbidity	Bather Load	Water Colour	Other
May 17/84	10:35	23	14	offshore	10	none	none	none	clear	0	clear	
June 2/84	9:30	18	16	offshore	20	none	light	none	clear	0	clear	
June 7/84	13:15	20	17	-	75	heavy	light	none	slight	0	light	
June 10/84	10:50	8	16	onshore	0	light	moderate	light	moderate	0	clear	
June 15/84	11:20	18	19	offshore	90	light	none	none	clear	0	clear	
June 18/84	9:20	16	20	onshore	90	none	none	light	clear	0	clear	
June 23/84	11:00	16	17	onshore	100	moderate	none	crests	moderate	0	light	
June 28/84	9:40	18	22	onshore	0	none	none	light	clear	2	clear	
July 1/84	10:40	20	24	offshore	30	light	none	none	clear	2	light	
July 6/84	9:05	17	20	onshore	10	none	none	light	clear	0	light	
July 9/84	11:00	22	22	offshore	10	none	none	none	clear	22	clear	
July 14/84	9:00	18	23	onshore	0	light	none	none	clear	0	light	
July 19/84	11:00	19	24	onshore	20	none	none	light	clear	3	light	
July 22/84	9:10	22	24	offshore	60	none	none	none	clear	6	clear	
July 27/84	11:00	22	24	onshore	0	none	moderate	none	clear	30	light	
July 30/84	9:10	22	23	offshore	90	light	light	none	clear	3	clear	
Aug. 4/84	10:40	25	24	offshore	10	none	moderate	none	clear	40	light	
Aug. 9/84	9:10	19	23	offshore	90	light	none	light	clear	2	light	
Aug. 12/84	10:40	20	22	offshore	10	none	moderate	light	clear	12	light	
Aug. 17/84	9:30	18	22	offshore	10	none	light	light	clear	0	moderate	
Aug. 20/84	12:40	19	-	-	100	heavy	none	none	slight	0	clear	
Aug. 25/84	9:00	20	22	offshore	0	none	light	none	clear	0	light	
Aug. 29/84	12:00	15	21	onshore	90	none	none	none	slight	0	clear	
Sept. 2/84	-	-	-	-	-	-	-	-	-	-	-	
May 29/85	11:30	17	16	onshore	100	light	light	light	clear	0	light	
June 6/85	10:10	16	14	offshore	100	light	light	light	clear	0	clear	
June 10/85	12:15	15	16	onshore	50	light	light	light	slight	0	clear	
June 17/85	9:45	10	17	onshore	80	light	light	light	slight	0	light	
June 28/85	11:40	14	15	offshore	100	moderate	moderate	light	slight	0	moderate	
July 6/85	8:50	16	22	offshore	30	light	light	light	slight	2	moderate	
July 12/85	11:50	24	24	offshore	0	none	light	none	clear	6	light	
July 18/85	9:40	18	22	offshore	30	none	moderate	none	clear	2	moderate	
July 29/85	12:15	18	20	onshore	0	none	light	light	clear	10	moderate	
Aug. 5/85	8:30	19	19	offshore	100	moderate	moderate	light	clear	6	moderate	
Aug. 19/85	11:45	16	14	onshore	30	light	light	light	clear	0	light	
Aug. 25/85	8:55	16	17	onshore	10	light	moderate	light	clear	0	moderate	
June 14/86	10:50	16	17	onshore	80	light	moderate	light	slight	0	moderate	
June 22/86	8:45	19	20	offshore	50	light	moderate	light	clear	0	moderate	
July 6/86	10:35	17	20	offshore	50	moderate	moderate	light	slight	1	heavy	
July 18/86	11:35	24	22	onshore	20	light	moderate	light	slight	2	moderate	
July 31/86	11:40	19	23	onshore	90	light	moderate	crests	slight	0	moderate	
Aug. 2/86	10:40	20	23	onshore	50	light	moderate	light	slight	3	moderate	
Aug. 9/86	10:40	19	22	onshore	100	light	moderate	light	slight	6	moderate	
Aug. 24/86	10:25	16	21	offshore	50	light	light	light	slight	0	heavy	
June 6/87	10:25	18	17	onshore	100	moderate	light	light	slight	0	moderate	
June 14/87	10:30	23	21	onshore	0	none	light	light	slight	4	moderate	
June 26/87	11:30	17	20	onshore	90	light	light	crests	moderate	0	light	
July 11/87	11:55	20	21	onshore	100	moderate	moderate	moderate	slight	6	moderate	
July 19/87	11:30	24	22	onshore	30	light	moderate	light	slight	4	moderate	
July 31/87	11:30	24	22	offshore	100	heavy	light	light	slight	0	moderate	

Table 24a: Fecal coliform, Escherichia coli and fecal streptococcus characteristics of Nutimik Lake beach, Nutimik Lake.

Date	Fecal Coliform 1	2	3	4	5	Geo. Mean	30-Day Geo. Mean	Escherichia coli 1	2	3	4	5	Geo. Mean	30-Day Geo. Mean	Fecal Streptococcus 1	2	3	4	5	Geo. Mean	30-Day Geo. Mean
May 17/84	<100	<100	<100	<100	<100	<100	<100								1	<1	<1	3	<1	<1	<1
June 2/84	1	<1	<1	2	2	<1	<11								<1	2	1	1	3	<1	<1
June 7/84	2	<1	5	4	4	<3	<7								33	8	5	12	3	9	<2
June 10/84	298	2	11	7	2	10	<8								100	10	33	23	10	24	<4
June 15/84	1	2	1	<1	9	<2	<6								9	16	9	7	15	11	<5
June 18/84	1	5	4	1	2	2	<5								16	12	16	11	19	15	<6
June 23/84	106	84	84	74	89	87	<5								143	132	107	129	139	129	<13
June 28/84	1	<1	1	<1	1	<1	<4								7	7	5	6	2	5	<12
July 1/84	<1	1	1	1	<1	<1	<3								33	25	25	2	11	14	<12
July 6/84	<1	<1	<1	<1	<1	<1	<3								3	4	7	9	1	4	13
July 9/84	<1	<1	<1	<1	1	<1	<3								3	1	1	2	1	1	11
July 14/84	<1	<1	4	<1	2	<2	<2								9	17	6	26	18	13	10
July 19/84	2	<1	3	1	4	<2	<2								262	105	115	138	85	130	14
July 22/84	<1	<1	<1	<1	<1	<1	<2								19	35	31	42	11	25	15
July 27/84	<1	<1	<1	<1	2	<1	<1								14	10	5	4	8	7	10
July 30/84	1	4	1	<1	2	<2	<1								40	26	4	9	6	12	11
Aug. 4/84	<1	<1	<1	2	3	<1	<1								65	30	48	28	75	46	13
Aug. 9/84	<1	1	4	2	1	<2	<1								10	19	15	51	2	12	15
Aug. 12/84	<1	1	<1	<1	<1	<1	<1								3	1	2	2	1	2	16
Aug. 17/84	<1	<1	<1	<1	2	<1	<1								4	5	28	21	22	12	15
Aug. 20/84	<1	<1	1	5	1	<1	<1								4	4	2	5	2	3	10
Aug. 25/84	<1	<1	<1	<1	<1	<1	<1								1	4	1	6	4	3	7
Aug. 29/84	6	2	6	6	5	5	<1								14	10	12	24	20	15	8
Sept. 2/84	<1	1	1	<1	1	<1	<1								<1	4	1	1	5	<2	<6
May 29/85	<10	<10	<10			<10	<10	<10	<10	<10			<10	<10	25	24	81			37	37
June 6/85	<10	<10	<10			<10	<10	<10	<10	<10			<10	<10	4	1	159			26	18
June 10/85	<1	<1	<1			<1	<5	<1	<1	<1			<1	<5	13	5	62			16	17
June 17/85	<1	<1	1			<1	<3	1	<1	1			<1	<3	3	1	2			2	10
June 28/85	<1	<1	1			<1	<1	<1	1	<1			<1	<1	3	5	7			5	10
July 6/85	<1	<1	<1			<1	<2	1	<1	<1			<1	<2	12	7	15			11	7
July 12/85	<1	3	1			<1	<1	4	<1	2			<2	<1	45	93	64			64	11
July 18/85	2	1	2			2	<1	4	1	1			2	<1	218	113	143			152	27
July 29/85	5	<1	<1			<2	<1	2	1	<1			<1	<1	12	53	20			23	40
Aug. 5/85	1	<1	<1			<1	<1	<1	3	1			<1	<1	21	69	13			27	37
Aug. 19/85	4	4	8			5	<2	<13	1	59			9	<3	16	16	30			19	32
Aug. 25/85	<1	<1	<1			<1	<2	<1	1	2			<1	<2	1	<1	1			<1	<11
June 14/86	<1	<1	<1			<1	<1	<1	<1	1			<1		8	23	1			11	11
June 22/86	<1	<1	<1			<1	<1								<42	1	1			4	4
July 6/86	1	<1	1			<1	<1	2	<1	3			<2		>300	8	19			>36	9
July 18/86	24	24	23			24	<2								172	89	75			105	16
July 31/86	3	6	14			6	<5								11	10	>300			>32	>49
Aug. 2/86	1	1	<1			<1	<4								5	8	14			8	>32
Aug. 9/86	5	3	1			3	<4	5	2	3			3		30	57	67			49	>34
Aug. 24/86	<1	<1	<1			<1	<2								2	<1	2			<2	><12
June 6/87	3	5	2			3	3								<1	2	1			<1	<1
June 14/87	7	9	9			8	5								1	<1	3			<1	<1
June 26/87	66	>300	149			>143	>15								5	6	3			4	<2
Aug. 11/87	68	80	101			82	>46								<1	<1	<1			<1	<2
July 19/87	2	7	7			5	>38								<1	<1	1			<1	<2
July 31/87	196	63	83			101	34								<1	<1	<1			<1	<1

Table 24b: Field observations recorded during the microbiological sample collections at Nutimik Lake beach, Nutimik Lake.

Date	Time (CDT)	Air Temp. (°C)	Water Temp. (°C)	Wind Direction	Cloud Cover (%)	Recent Precipitation	Visible Algae	Wave Action	Turbidity	Bather Load	Water Colour	Other
May 17/84	12:00	24	13	onshore	10	none	none	light	clear	0	clear	
June 2/84	9:00	17	12	offshore	0	none	none	none	clear	0	clear	
June 7/84	13:47	21	14	offshore	80	heavy	none	none	clear	0	clear	
June 10/84	10:20	8	14	onshore	20	light	light	light	clear	0	clear	
June 15/84	11:45	20	15	offshore	90	none	none	none	clear	0	clear	
June 18/84	8:50	16	17	onshore	90	none	none	light	clear	0	clear	
June 23/84	11:30	16	18	onshore	100	moderate	none	heavy	moderate	0	light	
June 28/84	9:20	17	18	onshore	0	none	none	none	clear	0	clear	
July 1/84	11:20	21	21	offshore	30	light	none	none	clear	2	clear	
July 6/84	8:40	16	19	onshore	10	light	none	light	clear	0	clear	
July 9/84	11:20	22	21	offshore	10	none	none	none	clear	0	clear	
July 14/84	8:40	18	21	onshore	0	light	none	none	clear	0	clear	
July 19/84	11:20	20	21	onshore	20	none	light	light	clear	4	light	
July 22/84	8:50	20	22	offshore	60	none	none	none	clear	0	clear	
July 27/84	11:20	22	24	onshore	0	none	light	none	clear	4	light	
July 30/84	8:50	22	24	offshore	90	light	light	none	clear	0	clear	
Aug. 4/84	11:05	26	23	offshore	10	none	light	none	clear	35	light	
Aug. 9/84	8:50	18	23	offshore	90	light	none	light	clear	0	light	
Aug. 12/84	11:00	21	23	offshore	10	none	light	none	clear	22	light	
Aug. 17/84	9:10	18	23	offshore	10	none	light	light	clear	0	moderate	
Aug. 20/84	13:05	19	-	-	100	heavy	light	none	clear	0	clear	
Aug. 25/84	8:40	19	22	offshore	0	none	light	none	clear	0	light	
Aug. 29/84	12:20	15	21	onshore	95	none	none	light	clear	0	clear	
Sept. 2/84	-	-	-	-	-	-	-	-	-	-	-	
May 29/85	11:50	17	13	onshore	100	light	light	none	moderate	0	light	
June 6/85	9:45	16	13	offshore	100	light	light	light	slight	0	clear	
June 10/85	12:45	16	16	offshore	50	light	none	light	moderate	0	light	
June 17/85	9:10	10	15	offshore	90	light	light	light	slight	0	light	
June 28/85	12:00	14	16	offshore	100	moderate	light	light	slight	0	light	
July 6/85	8:30	15	18	offshore	30	light	light	none	slight	0	light	
July 12/85	12:15	25	22	offshore	0	none	moderate	none	moderate	2	light	
July 18/85	9:10	17	19	offshore	50	none	light	none	clear	0	light	
July 29/85	12:40	19	20	onshore	10	none	light	light	slight	2	light	
Aug. 5/85	8:05	19	20	offshore	100	moderate	moderate	light	clear	0	light	
Aug. 19/85	12:15	17	14	onshore	30	light	light	light	clear	2	light	
Aug. 25/85	8:30	16	16	onshore	20	light	light	light	slight	0	light	
June 14/96	11:20	17	17	onshore	80	light	moderate	light	slight	0	moderate	
June 22/86	8:20	19	19	offshore	50	light	light	none	clear	0	light	
July 6/86	10:55	17	19	offshore	50	moderate	light	light	moderate	0	moderate	
July 18/86	11:55	24	21	onshore	20	light	moderate	light	slight	3	light	
July 31/86	12:10	20	22	onshore	90	light	light	moderate	slight	0	light	
Aug. 2/86	11:05	20	22	onshore	50	light	moderate	moderate	slight	2	light	
Aug. 9/86	11:05	20	22	onshore	100	light	moderate	light	slight	0	light	
Aug. 24/86	10:45	17	21	offshore	50	light	light	light	slight	0	light	
June 6/87	10:45	18	16	onshore	100	moderate	light	light	slight	0	light	
June 14/87	10:50	23	21	onshore	0	none	light	light	slight	0	light	
June 26/87	11:45	17	20	onshore	90	light	light	crests	moderate	0	light	
July 11/87	12:15	20	21	onshore	100	moderate	light	moderate	slight	1	light	
July 19/87	11:50	24	23	offshore	20	light	light	light	slight	1	light	
July 31/87	11:50	24	22	offshore	100	heavy	light	light	moderate	0	light	

Table 25a: Fecal coliform, Escherichia coli and fecal streptococcus characteristics of Dorothy Lake beach, Dorothy Lake.

Date	Fecal Coliform 1	2	3	4	5	Geo. Mean	30-Day Geo. Mean	Escherichia coli 1	2	3	4	5	Geo. Mean	30-Day Geo. Mean	Fecal Streptococcus 1	2	3	4	5	Geo. Mean	30-Day Geo. Mean
May 17/84	<100	<100	<100	<100	<100	<100	<100								3	<1	<1	2	<1	<1	<1
June 2/84	32	62	34	33	12	31	<55								2	<1	5	3	2	<2	<2
June 7/84	3	6	<1	9	5	<4	<23								30	83	13	29	21	29	<5
June 10/84	4	2	<1	3	2	<2	<13								11	11	10	15	14	12	<6
June 15/84	4	5	6	1	4	3	<10								5	5	7	8	28	8	<6
June 18/84	7	5	6	1	3	4	<8								53	52	44	28	32	40	<9
June 23/84	<1	35	31	34	17	<14	<6								160	151	184	140	70	134	<18
June 28/84	<1	1	<1	1	1	<1	<5								7	6	3	7	9	6	<15
July 1/84	11	3	2	<1	1	<2	<4								46	29	21	19	24	26	<17
July 6/84	1	<1	1	<1	<1	<1	<3								13	2	18	9	5	7	19
July 9/84	<1	<1	<1	<1	<1	<1	<2								32	14	14	11	7	14	17
July 14/84	<1	5	12	6	7	<5	<3								114	77	101	118	72	94	23
July 19/84	<1	8	19	33	45	<12	<3								136	36	46	91	131	77	30
July 22/84	<1	<1	<1	1	3	<1	<3								22	20	23	16	28	21	28
July 27/84	<1	2	1	7	30	<3	<2								31	15	9	27	13	17	21
July 30/84	<1	2	<1	<1	<1	<1	<2								5	7	5	6	10	6	21
Aug. 4/84	<1	2	3	1	17	<3	<2								21	7	70	62	83	35	22
Aug. 9/84	2	2	1	1	<1	<1	<2								4	11	10	8	9	8	22
Aug. 12/84	9	1	<1	<2	<1	<2	<3								3	1	2	26	2	3	19
Aug. 17/84	3	4	1	2	2	2	<2								140	6	3	5	4	9	14
Aug. 20/84	<1	<1	<1	1	<1	<1	<2								<1	<1	<1	<1	<1	<1	<8
Aug. 25/84	1	<1	2	<1	<1	<1	<2								<1	3	1	1	2	<1	<6
Aug. 29/84	1	2	<1	1	2	<1	<1								4	9	4	3	8	5	<5
Sept. 2/84	<1	<1	<1	<1	<1	<1	<1								4	<1	<1	4	1	<2	<4
June 6/87	27	23	17			22	22								<1	<1	<1			<1	<1
June 14/87	17	10	2			7	12								1	4	10			3	<2
June 26/87	>300	>300	156			>241	>33								13	10	5			9	<3
July 11/87	83	48	26			47	43								<1	<1	<1			<1	<3
July 19/87	3	<1	3			<2	><29								<1	<1	<1			<1	<2
July 31/87	57	<1	<1			<4	<7								55	2	6			9	<2

Table 25b: Field observations recorded during the microbiological sample collections at Dorothy Lake beach, Dorothy Lake.

Date	Time (CDT)	Air Temp. (°C)	Water Temp. (°C)	Wind Direction	Cloud Cover (%)	Recent Precipitation	Visible Algae	Wave Action	Turbidity	Bather Load	Water Colour	Other
May 17/84	12:35	24	12	onshore	10	none	none	light	clear	0	clear	
June 2/84	8:35	17	13	onshore	0	none	none	light	clear	0	clear	
June 7/84	14:20	21	15	onshore	80	heavy	none	none	clear	0	clear	
June 10/84	10:45	7	14	onshore	10	light	none	none	clear	0	clear	
June 15/84	12:15	20	16	offshore	90	none	none	none	clear	0	clear	
June 18/84	8:30	16	16	onshore	60	none	none	moderate	clear	0	clear	
June 23/84	11:55	16	17	onshore	100	moderate	none	heavy	moderate	0	light	
June 28/84	8:50	17	19	onshore	0	none	none	none	clear	0	clear	
July 1/84	11:50	21	21	offshore	20	light	none	none	clear	4	clear	
July 6/84	8:20	16	19	onshore	10	light	none	light	clear	0	clear	
July 9/84	11:45	22	24	onshore	10	none	none	light	clear	0	clear	
July 14/84	8:20	17	20	onshore	0	light	none	none	clear	0	moderate	
July 19/84	11:40	20	22	onshore	20	none	light	none	clear	5	clear	
July 22/84	8:30	20	21	offshore	60	none	none	none	clear	0	light	
July 27/84	11:40	22	24	onshore	0	none	moderate	none	clear	6	light	
July 30/84	8:30	22	23	offshore	90	light	light	none	clear	0	clear	
Aug. 4/84	11:30	26	24	offshore	10	none	light	none	clear	0	light	
Aug. 9/84	8:30	18	23	offshore	90	light	none	light	clear	0	light	
Aug. 12/84	11:25	22	23	offshore	10	none	light	light	clear	8	light	
Aug. 17/84	8:50	17	22	offshore	10	none	light	light	clear	0	light	
Aug. 20/84	13:30	19	-	-	100	heavy	none	none	slight	0	clear	
Aug. 25/84	8:20	18	22	offshore	0	none	light	none	clear	0	light	
Aug. 29/84	13:00	16	21	onshore	90	none	light	light	clear	0	clear	
Sept. 2/84	-	-	-	-	-	-	-	-	-	-	-	
June 6/87	11:05	18	15	onshore	100	moderate	light	light	slight	0	light	
June 14/87	11:10	23	22	onshore	0	none	light	moderate	slight	12	light	
June 26/87	12:05	17	20	onshore	90	light	light	crests	moderate	0	light	
July 11/87	12:35	22	21	onshore	100	moderate	light	moderate	slight	8	light	
July 19/87	12:10	24	22	onshore	10	light	light	light	slight	6	moderate	
July 31/87	12:10	24	23	offshore	100	heavy	light	light	slight	0	light	

Table 26a: Fecal coliform, Escherichia coli and fecal streptococcus characteristics of Gull Lake A (north shore beach).

Date	Fecal Coliform 1	2	3	4	5	Geo. Mean	30-Day Geo. Mean	Escherichia coli 1	2	3	4	5	Geo. Mean	30-Day Geo. Mean	Fecal Streptococcus 1	2	3	4	5	Geo. Mean	30-Day Geo. Mean
May 28/85	<10	<10	<10			<10	<10	10	<10	<10			<10	<10	NR	<1	<1			<1	<1
May 30/85	<10	<10	<10			<10	<10	<10	<10	<10			<10	<10	43	7	1			7	<3
June 2/85	<10	<10	<10			<10	<10	<10	<10	<10			<10	<10	<1	<1	<1			<1	<2
June 8/85	<10	<10	<10			<10	<10	10	<10	<10			<10	<10	5	5	1			3	<2
June 15/85	<10	<10	<10			<10	<10	<10	<10	<10			<10	<10	4	2	3			3	<2
June 24/85	<10	<10	20			<13	<10	<10	<10	<10			<10	<10	<1	1	38			<3	<3
June 30/85	40	50	70			52	<15	50	50	20			37	<12	22	41	15			23	<4
July 8/85	<10	<10	<10			<10	<15	<10	<10	<10			<10	<12	1	2	2			2	<4
July 14/85	<10	<10	<10			<10	<15	<10	<10	<10			<10	<12	3	<1	4			2	<4
July 21/85	<10	<10	<10			<10	<15	<10	<10	<10			<10	<12	5	<1	6			<4	<4
Aug. 3/85	<10	<10	<10			<10	<10	<10	<10	<10			<10	<10	42	67	8			28	<4
Aug. 11/85	<10	<10	10			<10	<10	20	<10	30			<18	<10	50	47	32			42	<10
Aug. 23/85	30	<10	<10			<14	<11	<10	<10	<10			<10	<12	50	12	16			21	29

Table 26b: Field observations recorded during the microbiological sample collections at Gull Lake A (north shore beach).

Date	Time (CDT)	Air Temp. (°C)	Water Temp. (°C)	Wind Direction	Cloud Cover (%)	Recent Precipitation	Visible Algae	Wave Action	Turbidity	Bather Load	Water Colour	Other
May 28/85	9:45	15	17	onshore	20	none	none	none	clear	0	clear	
May 30/85	11:15	20	17	onshore	100	none	none	none	clear	0	clear	
June 2/85	11:20	10	15	onshore	30	light	none	light	clear	0	clear	
June 8/85	9:00	20	18	onshore	70	moderate	none	moderate	clear	0	clear	
June 15/85	12:10	15	18	offshore	100	moderate	none	light	clear	0	clear	
June 24/85	9:10	15	16	onshore	10	none	light	light	clear	0	clear	raining
June 30/85	10:30	16	17	onshore	30	light	light	light	clear	0	clear	
July 8/85	11:20	24	24	onshore	30	none	none	light	clear	2	clear	
July 14/85	10:10	18	22	offshore	100	moderate	none	none	clear	1	clear	
July 21/85	9:10	14	20	offshore	60	none	light	light	clear	3	clear	
Aug. 3/85	11:15	21	22	offshore	100	moderate	light	none	clear	3	clear	
Aug. 11/85	11:15	14	19	offshore	100	none	light	light	clear	6	clear	
Aug. 23/85	11:05	17	17	onshore	100	heavy	light	none	clear	0	clear	raining

Table 27a: Fecal coliform, Escherichia coli and fecal streptococcus characteristics of Gull Lake B (Grace Ave. beach).

Date	Fecal Coliform 1	2	3	4	5	Geo. Mean	30-Day Geo. Mean	Escherichia coli 1	2	3	4	5	Geo. Mean	30-Day Geo. Mean	Fecal Streptococcus 1	2	3	4	5	Geo. Mean	30-Day Geo. Mean
May 28/85*	<10	<10	<10			<10	<10	<10	<10	<10			<10	<10	<1	<1	<1			<1	<1
May 30/85*	<10	<10	<10			<10	<10	<10	<10	<10			<10	<10	6	5	5			5	<2
June 2/85	<10	<10	<10			<10	<10	<10	<10	<10			<10	<10	2	4	1			2	<2
June 8/85	<10	<10	<10			<10	<10	<10	<10	<10			<10	<10	2	1	1			1	<2
June 15/85	<10	<10	<10			<10	<10	<10	<10	<10			<10	<10	5	1	3			2	<2
June 24/85	<10	<10	<10			<10	<10	<10	<10	<10			<10	<10	<1	4	3			<2	<2
June 30/85	<10	<10	<10			<10	<10	<10	<10	<10			<10	<10	6	3	2			3	<3
July 8/85	<10	<10	<10			<10	<10	<10	<10	<10			<10	<10	12	13	56			21	<3
July 14/85	10	<10	<10			<10	<10	<10	<10	<10			<10	<10	4	5	4			4	<4
July 21/85	<10	<10	<10			<10	<10	<10	<10	<10			<10	<10	14	6	16			11	<6
Aug. 3/85	<10	<10	<10			<10	<10	<10	<10	<10			<10	<10	21	11	40			21	12
Aug. 11/85	10	<10	10			<10	<10	<10	20	10			<13	<10	23	40	33			31	13
Aug. 23/85	<10	30	<10			<14	<11	<10	<10	<10			<10	<11	26	53	69			46	31

*Note: Samples for these days are from Arnhold Ave. beach.

Table 27b: Field observations recorded during the microbiological sample collections at Gull Lake B (Grace Ave. beach).

Date	Time (CDT)	Air Temp. (°C)	Water Temp. (°C)	Wind Direction	Cloud Cover (%)	Recent Precipitation	Visible Algae	Wave Action	Turbidity	Bather Load	Water Colour	Other
May 28/85*	9:20	15	16	offshore	20	none	none	light	clear	0	clear	*
May 30/85*	11:30	18	17	offshore	100	none	none	none	clear	0	clear	*
June 2/85	11:45	10	15	onshore	30	light	none	moderate	clear	0	clear	
June 8/85	8:40	20	17	offshore	80	moderate	none	light	clear	0	clear	
June 15/85	12:30	16	18	onshore	100	moderate	none	light	clear	0	clear	raining
June 24/85	8:50	14	16	offshore	10	none	light	light	clear	0	clear	
June 30/85	10:50	16	17	offshore	30	light	light	light	clear	0	clear	
July 8/85	11:40	24	24	offshore	30	none	none	none	clear	0	clear	
July 14/85	10:20	19	22	onshore	90	moderate	none	none	clear	0	clear	
July 21/85	9:30	15	20	onshore	50	none	light	light	clear	4	clear	
Aug. 3/85	11:35	21	22	offshore	100	moderate	light	light	clear	0	clear	
Aug. 11/85	11:35	14	19	onshore	100	none	light	light	clear	2	clear	
Aug. 23/85	11:30	17	17	offshore	100	heavy	light	none	clear	0	clear	raining

*Note: Samples for these days from Arnhold ave. beach.

Table 28a: Fecal coliform, Escherichia coli and fecal streptococcus characteristics of Manhattan Beach, Pelican Lake.

Date	Fecal Coliform 1	2	3	4	5	Geo. Mean	30-Day Geo. Mean	Escherichia coli 1	2	3	4	5	Geo. Mean	30-Day Geo. Mean	Fecal Streptococcus 1	2	3	4	5	Geo. Mean	30-Day Geo. Mean
June 20/85	54	<10	<10	40	20	<21		48	30	10	<10	30	<21		368	150	240	200	100	193	
July 27/85	<10	<10	<10	40	20	<15		<10	20	<10	30	30	<18		60	40	30	10	90	37	
Aug. 16/85	20	10	<10	<10	10	<11	<13	<10	10	<10	<10	<10	<10	<13	16	8	13	10	10	11	20
July 10/86	50	20	30	20	<10	<23		40	50	20	60	20	34		80	30	30	30	50	41	
Aug. 15/86	<10	20	20	<10	20	<15		10	30	10	20	20	16		90	100	170	70	130	107	
June 25/87	<10	<10	<10	<10	<10	<10									<10	10	10	10	<10	<10	
July 24/87	<10	<10	<10	<10	<10	<10									<10	<10	<10	10	10	<10	

Table 28b: Field observations recorded during the microbiological sample collections at Manhattan Beach, Pelican Lake.

Date	Time (CDT)	Air Temp. (°C)	Water Temp. (°C)	Wind Direction	Cloud Cover (%)	Recent Precipitation	Visible Algae	Wave Action	Turbidity	Bather Load	Water Colour	Other
June 20/85	11:00	22	19	onshore	10	none	light	moderate	extreme	0	light	
July 27/85	8:50	17	21	offshore	10	none	heavy	none	extreme	0	light	
Aug. 15/85	9:45	16	15	onshore	0	light	heavy	light	extreme	0	light	
July 10/86	9:40	17	21	onshore	100	heavy	moderate	moderate	extreme	0	light	
Aug. 15/86	9:45	23	20	onshore	0	none	moderate	moderate	extreme	0	light	
June 25/87	9:45	18	21	offshore	30	none	heavy	light	extreme	0	moderate	
July 24/87	9:25	21	22	offshore	20	light	moderate	light	moderate	0	light	

Table 29a: Fecal coliform, Escherichia coli and fecal streptococcus characteristics of Parks Branch beach, Pelican Lake.

Date	Fecal Coliform 1	2	3	4	5	Geo. Mean	30-Day Geo. Mean	Escherichia coli 1	2	3	4	5	Geo. Mean	30-Day Geo. Mean	Fecal Streptococcus 1	2	3	4	5	Geo. Mean	30-Day Geo. Mean
June 20/85	310	180	220	200	170	211		200	340	180	280	210	<235		280	480	380	330	270	340	
July 27/85	38	10	10	<10	10	<13		48	10	<10	10	10	<14		160	166	64	116	190	130	
Aug. 16/85	20	<10	10	40	<10	<11	<12	<10	<10	20	<10	10	<11	<13	46	23	99	70	22	44	76
July 10/86	10	30	60	30	20	26		50	20	40	<10	70	<31		450	580	530	620	460	524	
Aug. 15/86	30	40	50	10	30	28		120	60	20	160	140	80		240	70	110	220	220	155	
June 25/87	10	<10	<10	10	<10	<10									40	10	10	10	10	10	
Aug. 24/87	<10	<10	<10	<10	<10	<10									<10	<10	<10	<10	<10	<10	

Table 29b: Field observations recorded during the microbiological sample collections at Parks Branch beach, Pelican Lake.

Date	Time (CDT)	Air Temp. (°C)	Water Temp. (°C)	Wind Direction	Cloud Cover (%)	Recent Precipitation	Visible Algae	Wave Action	Turbidity	Bather Load	Water Colour	Other
June 20/85	11:45	23	19	onshore	10	none	light	moderate	extreme	0	light	
July 27/85	8:15	16	21	offshore	10	none	heavy	none	extreme	0	light	
Aug. 15/85	10:20	17	15	onshore	0	light	light	light	moderate	0	light	
July 10/86	10:10	17	21	onshore	100	heavy	moderate	moderate	extreme	0	light	
Aug. 15/86	10:10	23	20	onshore	0	none	moderate	moderate	extreme	0	light	
June 25/87	10:10	18	20	offshore	20	none	heavy	light	extreme	0	moderate	
July 24/87	9:45	21	22	offshore	20	light	moderate	light	moderate	0	light	

Table 30a: Fecal coliform, Escherichia coli and fecal streptococcus characteristics of Assessippi Beach, Lake of the Prairies.

Date	Fecal Coliform 1	2	3	4	5	Geo. Mean	30-Day Geo. Mean	Escherichia coli 1	2	3	4	5	Geo. Mean	30-Day Geo. Mean	Fecal Streptococcus 1	2	3	4	5	Geo. Mean	30-Day Geo. Mean
June 21/85	<1	<1	<1	3	1	<1		<1	2	1	1	2	<1		<2	<1	4	1	15	>3	
July 26/85	<1	1	1	2	1	<1		2	<1	<1	<1	<1	<1		1	2	3	1	1	<1	
Aug. 16/85	<1	<1	1	3	1	<1	<1	1	1	<1	3	1	<1	<1	14	6	11	7	13	10	<4
July 10/86	<1	<1	1	<1	2	<1		1	<1	<1	<1	5	<1		<1	4	<1	<1	11	2	
Aug. 15/86	4	7	9	17	34	11		<1	1	<1	<1	6	<1		22	14	31	31	33	25	
June 25/87	5	<1	3	2	1	<14									6	7	8	15	19	10	
July 24/87	<1	<1	<1	<1	<1	<1									3	5	15	5	10	6	

Table 30b: Field observations recorded during the microbiological sample collections at Asessippi Beach, Lake of the Prairies.

Date	Time (CDT)	Air Temp. (°C)	Water Temp. (°C)	Wind Direction	Cloud Cover (%)	Recent Precipitation	Visible Algae	Wave Action	Turbidity	Bather Load	Water Colour	Other
June 21/85	10:30	12	18	onshore	100	moderate	moderate	light	slight	0	light	
July 27/85	12:30	22	20	onshore	10	none	moderate	light	slight	0	light	
Aug. 16/85	8:15	10	16	onshore	100	light	heavy	light	slight	0	light	
July 10/86	3:00	18	19	offshore	100	heavy	light	light	slight	0	light	
Aug. 15/86	1:45	24	22	onshore	50	none	heavy	moderate	slight	0	light	
June 25/87	1:45	15	21	onshore	100	light	light	moderate	slight	40	light	
July 24/87	1:45	24	22	offshore	20	light	heavy	light	extreme	12	light	

Table 31a: Fecal coliform, Escherichia coli and fecal streptococcus characteristics of East Blue Lake beach, East Blue Lake.

Date	Fecal Coliform 1	2	3	4	5	Geo. Mean	30-Day Geo. Mean	Escherichia coli 1	2	3	4	5	Geo. Mean	30-Day Geo. Mean	Fecal Streptococcus 1	2	3	4	5	Geo. Mean	30-Day Geo. Mean
June 21/85	<1	<1	<1	<1	<1	<1		<1	<1	<1	<1	<1	<1		<1	2	<1	<1	<1	<1	
July 26/85	<1	1	1	<1	<1	<1		<1	<1	<1	<1	<1	<1		<1	1	6	<1	1	<1	
Aug. 16/85	19	1	1	<1	<1	<2	<1	1	<1	<1	<1	<1	<1	<1	12	1	<1	1	1	<2	<2
July 11/86	<1	<1	<1	<1	<1	<1		<1	<1	<1	<1	<1	<1		5	<1	4	3	1	<2	
Aug. 15/86	<1	<1	<1	<1	<1	<1		<1	<1	<1	<1	<1	<1		<1	2	1	1	3	<1	

Table 31b: Field observations recorded during the microbiological sample collections at East Blue Lake beach, East Blue Lake.

Date	Time (CDT)	Air Temp. (°C)	Water Temp. (°C)	Wind Direction	Cloud Cover (%)	Recent Precipitation	Visible Algae	Wave Action	Turbidity	Bather Load	Water Colour	Other
June 21/85	1:40	14	15	offshore	100	light	none	none	clear	0	clear	
July 26/85	9:10	18	18	offshore	10	none	light	none	clear	0	clear	
Aug. 16/85	10:30	10	17	onshore	100	light	none	light	clear	0	clear	
July 11/86	8:25	17	18	onshore	100	heavy	light	light	clear	0	clear	
Aug. 15/87	3:50	25	21	onshore	50	none	none	none	clear	0	clear	

Table 32a: Fecal coliform, Escherichia coli and fecal streptococcus characteristics of Childs Lake beach, Childs Lake.

Date	Fecal Coliform 1	2	3	4	5	Geo. Mean	30-Day Geo. Mean	Escherichia coli 1	2	3	4	5	Geo. Mean	30-Day Geo. Mean	Fecal Streptococcus 1	2	3	4	5	Geo. Mean	30-Day Geo. Mean
June 21/85	<1	<1	<1	<1	<1	<1		<1	<1	<1	<1	<1	<1		<1	2	<1	<1	1	<1	
July 26/85	<1	1	<1	<1	<1	<1		<1	<1	<1	<1	<1	<1		5	3	7	6	7	5	
Aug. 16/85	10	11	2	8	2	5	<2	16	12	1	7	<1	<4	<2	50	23	19	30	6	21	11
July 11/86	<1	2	1	1	1	<1		<1	<1	9	<1	1	<2		15	17	10	9	11	12	
Aug. 15/86	<1	<1	<1	1	<1	<1		2	<1	2	1	<1	<1		<1	3	<1	1	<1	<1	

Table 32b: Field observations recorded during the microbiological sample collections at Childs Lake beach, Childs Lake.

Date	Time (CDT)	Air Temp. (°C)	Water Temp. (°C)	Wind Direction	Cloud Cover (%)	Recent Precipitation	Visible Algae	Wave Action	Turbidity	Bather Load	Water Colour	Other
June 21/85	12:40	14	14	offshore	100	light	none	none	clear	0	clear	
July 26/85	9:50	19	19	offshore	10	none	light	none	clear	0	clear	
Aug. 16/85	10:00	10	15	onshore	100	light	light	moderate	clear	0	clear	
July 11/86	7:45	17	17	onshore	100	heavy	light	light	clear	0	clear	
Aug. 15/86	3:25	25	20	onshore	50	none	none	none	clear	0	clear	

Table 33a: Fecal coliform, Escherichia coli and fecal streptococcus characteristics of Rainbow Beach, Dauphin Lake.

Date	Fecal Coliform 1	2	3	4	5	Geo. Mean	30-Day Geo. Mean	Escherichia coli 1	2	3	4	5	Geo. Mean	30-Day Geo. Mean	Fecal Streptococcus 1	2	3	4	5	Geo. Mean	30-Day Geo. Mean
June 21/85	10	20	50	<10	20	<18	<18	60	50	20	20	60	37	37	170	70	180	100	90	114	114
July 26/85	<10	10	60	40	60	<27	<22	<10	<10	90	80	50	<32	<35	17	27	107	77	84	50	76
Aug. 16/85	20	50	120	20	90	46	<35	50	40	50	50	20	40	<36	204	148	166	214	194	184	96
July 11/86	370	240	270	260	240	272		210	230	190	160	180	192		500	600	500	420	330	461	
July 24/86	<10	<10	<10	<10	<10	<10		<10	<10	<10	<10	<10	<10		<10	20	<10	10	20	<14	
Aug. 15/86	350	330	450	260	340	341		450	270	200	300	220	276		220	200	340	340	270	268	

Table 33b: Field observations recorded during the microbiological sample collections at Rainbow Beach, Dauphin Lake.

Date	Time (CDT)	Air Temp. (°C)	Water Temp. (°C)	Wind Direction	Cloud Cover (%)	Recent Precipitation	Visible Algae	Wave Action	Turbidity	Bather Load	Water Colour	Other
June 22/85	8:25	9	14	onshore	100	none	none	crests	extreme	0	light	
July 25/85	11:20	17	19	offshore	30	light	light	light	extreme	0	light	
Aug. 16/85	12:40	12	17	onshore	100	light	light	moderate	extreme	0	light	
July 11/86	9:50	17	19	onshore	100	heavy	light	crests	extreme	0	light	
July 24/86	10:20	18	22	onshore	100	light	light	moderate	moderate	0	light	
Aug. 15/86	5:45	26	22	onshore	10	none	light	light	extreme	20	light	

Table 34a: Fecal coliform, Escherichia coli and fecal streptococcus characteristics of Dauphin Beach, Dauphin Lake.

Date	Fecal Coliform 1	2	3	4	5	Geo. Mean	30-Day Geo. Mean	Escherichia coli 1	2	3	4	5	Geo. Mean	30-Day Geo. Mean	Fecal Streptococcus 1	2	3	4	5	Geo. Mean	30-Day Geo. Mean
June 21/85	<10	<10	20	10	30	<14		<10	<10	40	50	30	<23		190	240	80	60	20	85	
July 26/85	<10	<10	20	<10	<10	<11		10	<10	<10	<10	20	<7		9	28	33	13	31	20	
Aug. 16/85	28	70	110	90	140	95	<33	60	120	30	80	90	69	<28	208	220	236	172	226	211	65
July 11/86	60	90	110	150	110	180		90	100	130	130	110	111		510	530	500	520	520	516	
July 24/86	30	20	<10	10	<10	<16		<10	10	<10	<10	<10	<10		<10	20	<10	10	20	<14	
Aug. 15/86	450	300	240	300	290	309		340	240	340	270	280	290		370	350	320	320	260	322	
June 25/87	10	<10	<10	<10	<10	<10									100	240	250	140	120	159	
July 24/87	<10	10	20	<10	<10	<11									20	10	<10	<10	<10	<11	

Table 34b: Field observations recorded during the microbiological sample collections at Rainbow Beach, Dauphin Lake.

Date	Time (CDT)	Air Temp. (°C)	Water Temp. (°C)	Wind Direction	Cloud Cover (%)	Recent Precipitation	Visible Algae	Wave Action	Turbidity	Bather Load	Water Colour	Other
June 22/85	8:00	9	14	onshore	100	none	none	moderate	extreme	0	light	
July 25/85	11:45	18	19	offshore	30	light	light	light	extreme	4	light	
Aug. 16/85	12:10	12	16	onshore	100	light	light	moderate	extreme	0	light	
July 11/86	9:20	17	19	onshore	100	heavy	light	crests	extreme	0	light	
July 24/86	10:00	18	22	onshore	100	light	light	moderate	moderate	0	light	
Aug. 15/86	5:20	26	22	onshore	10	none	light	light	extreme	4	light	
June 25/87	4:15	19	19	onshore	100	moderate	light	crests	extreme	0	light	
July 24/87	4:20	26	22	onshore	20	light	light	light	extreme	35	light	

Table 35a: Fecal coliform, Escherichia coli and fecal streptococcus characteristics of Ochre Beach, Dauphin Lake.

Date	Fecal Coliform 1	2	3	4	5	Geo. Mean	30-Day Geo. Mean	Escherichia coli 1	2	3	4	5	Geo. Mean	30-Day Geo. Mean	Fecal Streptococcus 1	2	3	4	5	Geo. Mean	30-Day Geo. Mean
June 21/85	20	20	10	10	<10	<13		20	20	20	20	20	22		30	110	10	40	20	31	
July 26/85	<10	<10	10	<10	20	<11		14	<10	<10	<10	<10	<11		50	33	47	20	18	31	
Aug. 16/85	20	<10	40	10	20	<17	<14	20	<10	<10	10	10	<11	<11	92	98	104	82	98	95	54
July 11/86	180	280	310	280	220	249		150	180	240	190	160	182		400	470	350	530	480	441	
July 24/86	10	<10	<10	<10	<10	<10		<10	10	<10	<10	<10	<10		10	<10	60	10	<10	<10	
Aug. 15/86	830	1160	690	480	330	637		580	540	750	420	300	495		410	580	1200	490	310	534	
June 25/87	10	10	40	30	40	22									240	280	140	430	190	238	
July 24/87	<10	<10	10	<10	<10	<10									10	<10	20	<10	<10	<11	

Table 35b: Field observations recorded during the microbiological sample collections at Ochre Beach, Dauphin Lake.

Date	Time (CDT)	Air Temp. (°C)	Water Temp. (°C)	Wind Direction	Cloud Cover (%)	Recent Precipitation	Visible Algae	Wave Action	Turbidity	Bather Load	Water Colour	Other
June 22/85	8:45	10	14	onshore	100	none	none	moderate	extreme	0	light	
July 25/85	10:55	17	19	offshore	30	light	light	light	extreme	0	light	
Aug. 16/85	1:15	12	17	onshore	100	light	light	moderate	extreme	0	light	
July 11/86	10:15	17	19	onshore	100	heavy	light	crests	extreme	0	light	
July 24/86	10:40	18	22	onshore	100	light	light	moderate	moderate	0	light	
Aug. 15/86	6:20	26	22	onshore	10	none	light	light	extreme	2	light	
June 25/87	4:40	19	19	onshore	100	moderate	light	crests	extreme	0	light	
July 24/87	4:40	26	22	onshore	20	light	light	light	extreme	4	light	

APPENDIX 2

Table 1a: Fecal coliform, Escherichia coli and fecal streptococcus characteristics of Red River at Selkirk.

Date	Fecal Coliform 1	2	3	4	5	Geo. Mean	30-Day Geo. Mean	Escherichia coli 1	2	3	4	5	Geo. Mean	30-Day Geo. Mean	Fecal Streptococcus 1	2	3	4	5	Geo. Mean	30-Day Geo. Mean
June 12/86		>3000				>3000	>3000									550				550	550
June 15/86		3000	>3000			>3000	>3000		1900	3100			2430			100	100			100	235
June 19/86		<100				<100	><970									400				400	280
June 21/86		7000	4900			5860	1520									1420	1290			1350	420
June 23/86		400	100			200	1010									1000	1000			1000	500
June 28/86		2300	2100			2200	1150									440	260			340	470
June 30/86		240	150			190	890									60	170			100	370
July 5/86		2300	4300	220		1300	930		<100	8900	6800		1820			700	740	690		710	410
July 12/86		29000	33000			31000	1380									1760	1990			1870	480
July 17/86		5000	3500			4200	1300									160	310			220	520
July 19/86		2900	3500			3200	1440									270	230			250	480
July 25/86		3000	2900			2950	2530									340	450			390	420
July 27/86		10500	10100			10300	3020									410	360			380	370
Aug. 1/86		1500	2400			1900	4390									150	120			130	390
Aug. 3/86		900	3500			1800	3930									40	50			45	300
Aug. 8/86		1110	1680	1280		1340	3940		1200	800	570		820			40	10	30		20	190
Aug. 17/86		400	230			300	2210									40	40			40	120
Aug.21/86		210	240			225	1380									10	40			25	80
Aug. 23/86		350	400			375	1170									30	<10			<20	<70
June 4/87			1100				1100									530					530
June 5/87			1200				1149									500					515
June 7/87			200				642									100					298
June 8/87			1100				734									<100					<227
June 11/87			5900				1114									<600					<276
June 12/87			4730				1417									280					<276
June 13/87			1430				1419									170					<258
June 15/87			820				1325									30					<197
June 19/87			420				1166									10					<141
June 20/87			2200				1243														
June 21/87			240				1070									30					<121
June 27/87			220				938									70					<115
July 3/87			220				839									140					117
July 5/87			90				715									<10					84
July 10/87			<10				480									60					66
July 16/87			130				183									20					30
July 17/87			140				178									20					30
July 18/87			150				175									30					35
July 25/87			110				103									<10					30
July 30/87			>300				108									134					43
Aug. 2/87			380				124									380					37
Aug. 8/87			>300				134									112					49
Aug. 9/87			390				150									40					48
Aug. 17/87			360				240														

Table 1b: Field observations recorded during the microbiological sample collections at Red River at Selkirk.

Date	Time (CDT)	Air Temp. (°C)	Water Temp. (°C)	Wind Direction	Cloud Cover (%)	Recent Precipitation	Visible Algae	Wave Action	Turbidity	Bather Load	Water Colour	Other
June 12/86	12:00	18	17	N/A	100	light	none	moderate	extreme	N/A	light	
June 15/86	11:40	13	17	N/A	30	none	light	moderate	extreme	N/A	light	
June 19/86	12:30	26	22	N/A	20	none	light	light	extreme	N/A	light	
June 23/86	12:15	12	22	N/A	100	light	light	light	moderate	N/A	light	
June 28/86	10:40	19	18	N/A	0	none	light	light	extreme	N/A	light	
June 30/86	12:00	20	21	N/A	100	none	none	none	extreme	N/A	light	
July 5/86	10:55	20	22	N/A	30	heavy	light	light	extreme	N/A	light	
July 12/86	11:00	17	21	N/A	100	heavy	light	light	extreme	N/A	light	
July 17/86	12:00	19	21	N/A	100	moderate	light	light	extreme	N/A	light	
July 19/86	10:20	20	22	N/A	50	none	light	light	extreme	N/A	light	
July 25/86	11:35	18	22	N/A	70	light	light	moderate	extreme	N/A	light	
July 27/86	10:40	20	24	N/A	100	light	light	light	extreme	N/A	light	
Aug. 1/86	11:50	18	23	N/A	100	heavy	light	moderate	extreme	N/A	light	
Aug. 3/86	10:55	20	23	N/A	50	moderate	light	moderate	extreme	N/A	light	
Aug. 8/86	11:45	19	23	N/A	30	none	light	light	extreme	N/A	light	
Aug. 17/86	10:45	14	22	N/A	30	none	light	light	extreme	N/A	light	
Aug. 21/86	11:35	17	22	N/A	0	none	moderate	light	extreme	N/A	light	
Aug. 23/86	10:50	17	21	N/A	0	none	heavy	light	extreme	N/A	light	
June 4/87	11:25	16	17	N/A	30	moderate	light	light	extreme	N/A	light	
June 5/87	12:50	20	19	N/A	10	light	light	light	extreme	N/A	light	
June 7/87	11:00	20	19	N/A	20	light	light	moderate	extreme	N/A	light	
June 8/87	11:35	20	20	N/A	10	none	light	light	extreme	N/A	light	
June 11/87	11:00	21	19	N/A	100	heavy	light	light	extreme	N/A	light	
June 13/87	10:45	22	21	N/A	20	none	moderate	light	extreme	N/A	light	
June 15/87	11:45	26	22	N/A	0	none	light	moderate	extreme	N/A	light	
June 19/87	1:35	28	23	N/A	0	none	light	light	extreme	N/A	light	
June 20/87	1:10	22	22	N/A	30	none	light	light	extreme	N/A	light	
June 21/87	11:20	26	24	N/A	100	moderate	light	light	extreme	N/A	light	
June 27/87	12:40	20	21	N/A	50	light	light	moderate	extreme	N/A	light	
July 3/87	11:00	25	22	N/A	10	light	light	light	extreme	N/A	light	
July 5/87	1:00	22	20	N/A	30	light	light	light	extreme	N/A	light	
July 10/87	12:25	22	22	N/A	30	moderate	light	moderate	extreme	N/A	light	
July 16/87	12:00	20	21	N/A	30	light	light	moderate	extreme	N/A	light	
July 17/87	11:40	18	21	N/A	100	none	light	moderate	extreme	N/A	light	
July 18/87	10:50	18	20	N/A	100	moderate	light	light	extreme	N/A	light	
July 25/87	11:35	24	20	N/A	0	none	light	light	moderate	N/A	light	
July 30/87	11:25	26	23	N/A	10	none	light	light	extreme	N/A	light	
Aug. 2/87	11:50	26	23	N/A	30	light	light	light	extreme	N/A	light	
Aug. 8/87	10:55	21	24	N/A	10	none	moderate	light	extreme	N/A	light	
Aug. 9/87	11:35	22	24	N/A	10	none	moderate	light	extreme	N/A	light	
Aug. 17/87	11:40	20	20	N/A	10	heavy	light	light	extreme	N/A	light	

APPENDIX 3

Table 1: Fecal coliform and fecal streptococcus speciation.

Fecal Coliform Analyses

Species	Number of Colonies	Percentage
Klebsiella sp	2	0.02%
Escherichia coli	216	99.08%
Total	218	100 %

Fecal Streptococcus Analyses

Species	Number of Colonies	Percentage
Streptococcus equinus	5	1.79%
S. avium	63	22.50%
S. bovis	3	1.07%
S. faecalis	59	21.07%
S. faecium	83	29.65%
S. durans	51	18.21%
Miscellaneous	16	5.71%
	280	100 %